1
68
.4
o.2
.1
ERSTS

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Volume IV (Old Series Vol. XVIII) MARCH, 1911 Number 2 (Old Series No. 7)

THE SOUTHERN MEDICAL JOURNAL

JOURNAL OF THE SOUTHERN MEDICAL ASSOCIATION

INCORPORATING THE GULF STATES JOURNAL OF MEDICINE AND SURGERY AND MOBILE MEDICAL AND SURGICAL JOURNAL

Published Monthly at Nashville and Mobile. Price $2.00 per year, 20 cents per sing

Address Southern Medical Journal, Suite 905 Van Antwerp Building, Mobile, Ala., U.S.A. Entered as Second Class Matter, July 8, 1908, at the Post Office, Nashville, Tenn.

EDITORIAL STAFF

SEALE HARRIS, M.D., Editor-in-Chief H. A. MOODY, M.D., Managing Editor

ASSOCIATE EDITORS

J. A. WITHERSPOON, M.D., W. D. HAGGARD, M.D., WM. LITTERER, M.D., W. A. BRYAN, M.D., M. M. CULLOM, M.D., OSCAR DOWLING, M.D.

TABLE OF CONTENTS

ORIGINAL ARTICLES

Southern Surgeons and Surgery Before, During and After the Civil War. By W. O. Roberts, M.D., Louisville, Ky. 189
On Some of the Factors that Influence the Prognosis of Operation for Cancer. By Geo. W. Crile, M.D., Cleveland, O. 200
Report of a Case of Aneurysm, with a New Method of Ligature of Left Subclavian. By J. Garland Sherrill, M.D., Louisville 205
Complete Absence of the Vagina, Operation for Formation of Plastic Vagina. By Alex Hugh Ferguson, M.D., Chicago 210
Acute Multiple Urogenous Abscess of the Kidney Resembling Acute Unilateral Hematogenous Nephritis. By George Tully Vaughan, M.D., Washington, D. C. 223
Diagnosis of Ectopic Gestation; When and When Not to Operate. By E. Gustav Zinke, M.D., Cincinnati, O. 229
Omentopexy. By Maurice H. Richardson, M.D., Boston, Mass. 234

EDITORIALS

Meeting of the Southern Medical and Surgical Association 242
Discrimination 244
Vital Statistics 246
An Object Lesson 247
A Good Example 248
A Repetition 249
The Yersin-Roux Serum 243
Tuberculin Redivivus 245
Mistaken Self-Interest 246
Encourage New Recruits 248
"Not to be Refilled" 249
An Unintentional Omission 249

Book Reviews 249-254
Therapeutic Notes 254

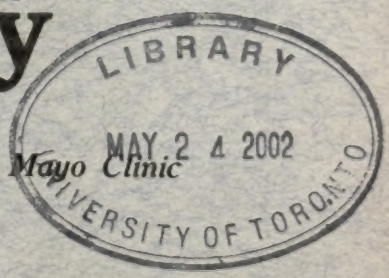
THE TRUTH AND THE TRUTH ONLY ON EVERY PAGE FROM COVER TO COVER

Just Ready

Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic

Cabot's Differential Diagnosis

Mumford's The Practice of Surgery



SAUNDERS

SEE PAGE 9

The City View Sanitarium

SEPARATE BUILDINGS FOR MEN AND WOMEN. NASHVILLE, TENN.

A licensed ethical private institution for the treatment of Mental and Nervous Diseases, and a selected class of Alcoholic and Drug addictions. Commodious, well arranged, and thoroughly equipped buildings. Women's department just completed, fireproof throughout. Home-like surroundings a special feature. Specially trained nurses. Two resident physicians. Capacity 50.

Consultants—Dr. Duncan Eve, Dr. Wm. G. Ewing, Dr. J. A. Witherspoon, Dr. Paul F. Eve, Dr. S. S. Crockett, Dr. L. B. Graddy, Dr. W. W. Core.

JOHN W. STEVENS, M.D., Physician-in-Charge.

'Phone Main 2928 NASHVILLE, TENN. Rural Route No. 1

GULF COAST HEALTH RESORT

A Private Institution for the Treatment of Nervous Diseases, Mild Mental Disorders, Drug and Alcohol Addictions.

Hydrotherapy, Electrotherapy, Massage, Etc.

W. R. Card, M.D., Supt., 1232 W. Beach, Biloxi, Miss.

CURRAN POPE A. THRUSTON POPE

A MODERN up-to-date private infirmary equipped with steam heat, electric light, electric fans, modern plumbing and new furnishings. Solicits all chronic cases, functional and organic nervous diseases, diseases of the stomach and intestines, rheumatism, gout and uric acid troubles, drug habits and non-surgical diseases of men and women. No insanity or infectious cases treated. Bed-ridden cases not received without previous arrangement.

Hydrotherapy, Mechanical Massage, Static, Galvanic, Faradic, High Frequency, Arc Light and X-Ray Treatments given by competent Physicians and Nurses under the immediate supervision of the Medical Superintendent. Special laboratory facilities for diagnosis by urine, blood, sputum, gastric juice and X-Ray. Recreation hall with pool and billiards for free use of patients.

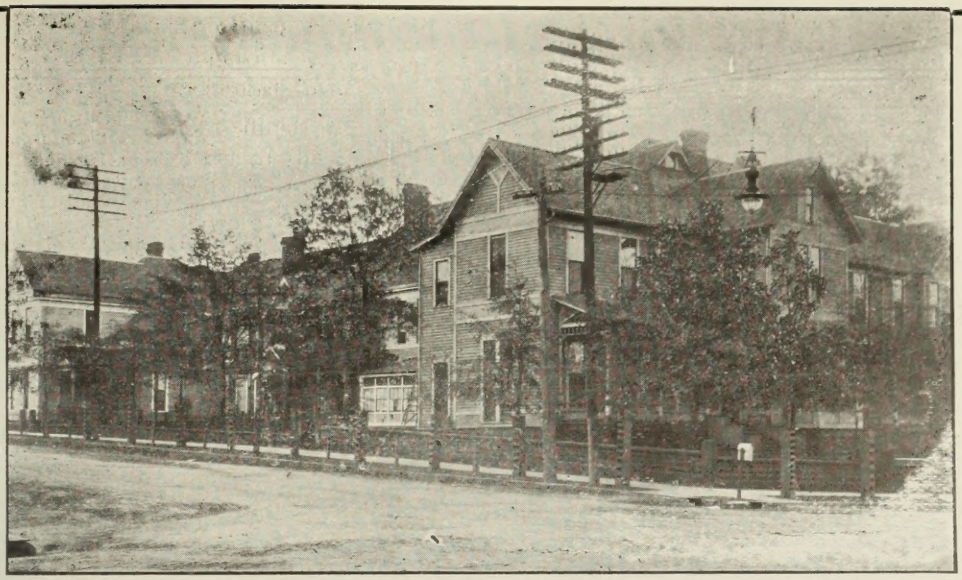
Rates $25 per week; including treatment, board, medical attention and general nursing. Send for large illustrated catalog. The Sanatorium is supplied daily, from the Pope Farm, with vegetables, poultry and eggs; also milk, cream, butter and buttermilk from its herd of registered Jerseys.

THE POPE SANATORIUM

INCORPORATED
Established 1890

Long Distance Phones
CUMB. M. 2122 HOME 2122

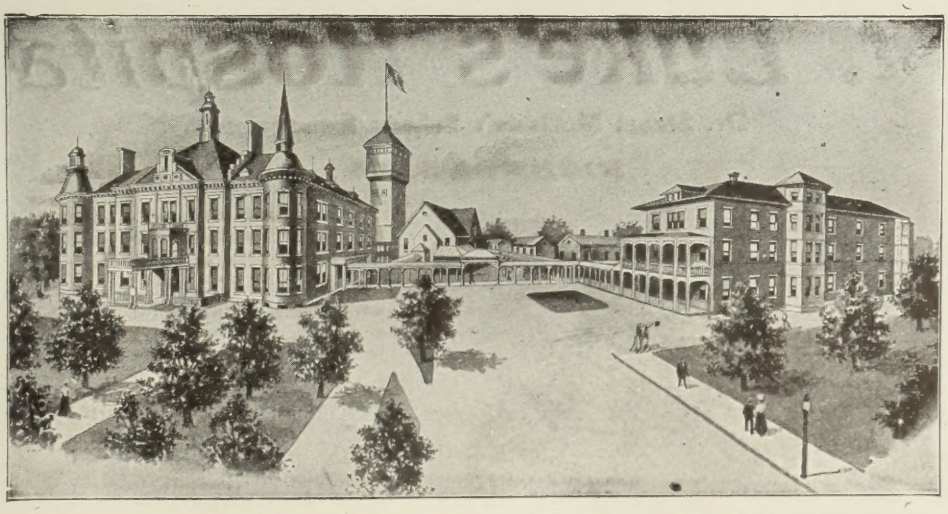
115 West Chestnut Street
LOUISVILLE, KENTUCKY



DAVIS INFIRMARY, For Diseases of Women and Surgical Cases and Hospital Training School for Nurses ¶ The buildings are well constructed for surgical work, and especially for abdominal cases. The annex and other improvements recently made provide increased facilities and complete equipment.

Competent Staff of Consultants and Assistants—Neurologist, Internist, Opthalmologist, Cystescopist, Radiologist, Pathologist

Ambulance Service. **J. D. S. DAVIS, M.D., Birmingham, Alabama.**



THE CINCINNATI SANITARIUM

A Private Hospital for Mental and Nervous Disorders, Opium Habit, Inebriety, Etc.

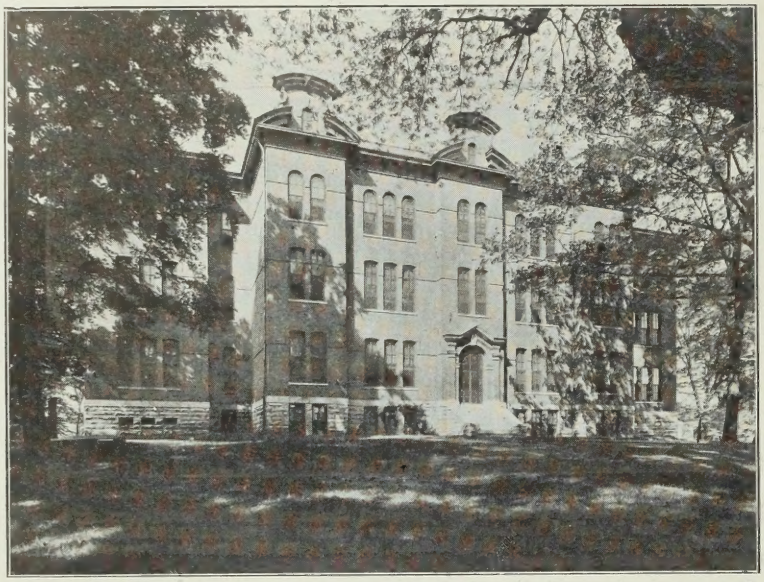
Thirty-seven years successful operation. Thoroughly rebuilt, remodeled, enlarged, and refurnished. Proprietary interests strictly non-professional. Two hundred patients admitted annually. Detached apartments for nervous invalids, opium habit, inebriety, etc. Location retired and salubrious. Grounds extensive. Surroundings delightful. Appliances Complete. Charges reasonable. Electric cars from Fountain Square, Cincinnati, to Sanitarium entrance.

Long Distance Telephone, Park 135.

Dr. F. W Langdon, Medical Director; **B. A. Williams** and **C. B. Rodgers,** Resident Physicians. FOR PARTICULARS ADDRESS **THE CINCINNATI SANITARIUM** or P. O. BOX No. 4, COLLEGE HILL, STATION K, CINCINNATI, OHIO.

BEECHHURST SANITARIUM

LOUISVILLE, KENTUCKY



A thoroughly modern and well equipped psychopathic hospital for the treatment of nervous and mental diseases, drug addictions and alcoholism. Ample buildings. Detached apartments for special cases. Twenty-five acres of wooded lawn. High and retired.

H. H. YEAMAN, M.D.,
Superintendent.
(Late Supt. Central Ky. Asylum)

H. B. SCOTT, A.M.M.D.,
Asst. Physician.

Long Distance Phones:
Cumberland, E. 257a
Home, 3555

St. Luke's Hospital

Dr. Stuart McGuire's Private Sanatorium

RICHMOND, VA.

Owned and personally conducted by Dr. Stuart McGuire for the exclusive use of his private patients.

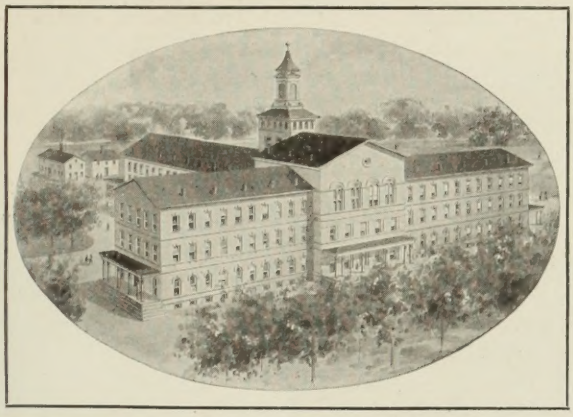
Building erected for the purpose to which it is devoted, and combines the comforts of a home with the conveniences of a modern hospital.

Located in residential section, convenient to all part of the citf by means of the street car service.

Capacity for sixty patients. Single and double bedrooms, with or without bath. No wards.

Designed for surgical and gynecological cases. No contagious diseases, Insane or colored patients received.

Cost of board and nursing and other information may be obtained by addressing the Secretary.



OXFORD RETREAT

OXFORD, OHIO

Nervous and Mental Diseases
Alcohol and Drug Addictions

FOR MEN AND WOMEN

96 Acres Lawn and Forest. Buildings Modern and First-Class in all Appointments. Thoroughly Equipped. Of Easy Access—39 Miles from Cincinnati, on C. H. & D. R. R. 10 Trains Daily.

THE PINES

An Annex for Nervous Women

Write for Descriptive Circular

R. HARVEY COOK, M. D., Physician-in-Chief

RUDOLPH MATERNITY HOME

An Ethical and Christian Home, with all modern conveniences for the care and protection of a select and limited number of unfortunate girls. The situation of the home is retired, affording the patients space for exercise and yet be shielded from public view. Home provided for infant if desired. Terms reasonable. Correspondence solicited. Address

Rudolph Maternity Home, 219 Spring St., Nashville, Tenn.

The Grandview Sanitarium

PRICE HILL {Glenway Avenue} CINCINNATI.

For Mental and Nervous Diseases

ALCOHOLISM and DRUG HABIT

Especial Attention is Called to Our Plan of INDIVIDUAL CARE AND TREATMENT

No ward service. Plenty of Nurses. Location ideal—high and beautiful. Large tract of wood and lawn. Retired, quiet and accessible. Grand views and perfect sanitation.

REFERENCES: The Medicrl Profession of Cincinnati.

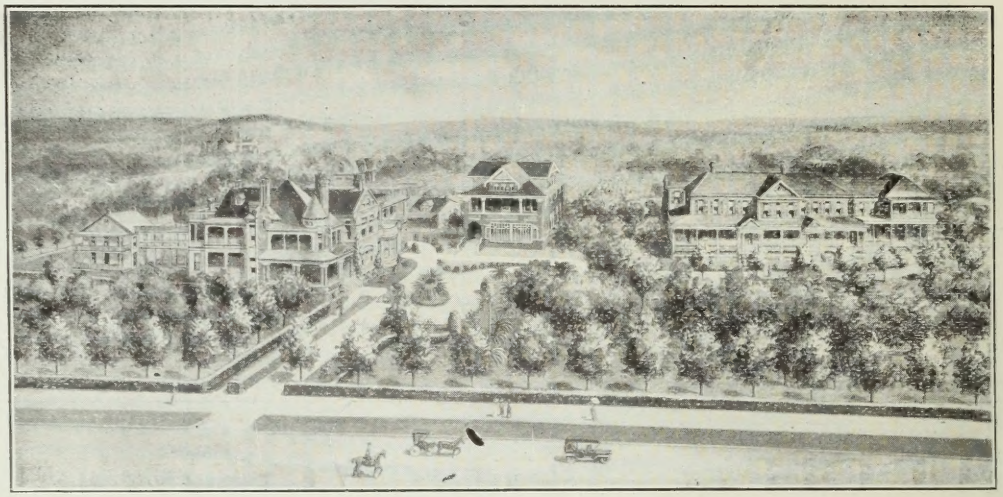
BROOKS F. BEEBE, M.D., Residen Medical Supt.

Office: 414 Walnut Street, Cincinnati, Ohio

G. H. MOODY, M.D.
Resident Physician

T. L. MOODY, M.D.
Resident Physician

J. A. McINTOSH, M.D.
Resident Physician



DR. MOODY'S SANITARIUM (Six Modern Buildings)
(Incorporated under the Laws of Texas.)

For Nervous Diseases, Selected Cases of Mental Diseases, Drug and Alcohol Addictions

315 Brackenridge Avenue *SAN ANTONIO, TEXAS*

MEMPHIS **LYNNHURST** TENNESSEE

A PRIVATE SANITARIUM FOR NERVOUS DISEASES MILD MENTAL DISORDERS AND DRUG ADDICTIONS

A Rest Home for Nervous Invalids and Convalescents, requiring environments differing from their home surroundings. Large grounds Two buildings. New and modern equipment. Hydrotherapy, Electrotherapy, Massage and the Rest Treatment. Experienced nurses; also a woman physician on duty. Climate mild, equable and salubrious. Artesian, chalybeate and soft waters

S. T. RUCKER, M. D., Medical Supt., Memphis, Tenn.

RIVER CREST SANITARIUM

For Nervous and Mental Diseases, including committed and voluntary patients, Alcoholic and Narcotic Habitues.

Sanitarium Phone 679 Astoria ASTORIA, Long Island, NEW YORK CITY **(Under State License)**

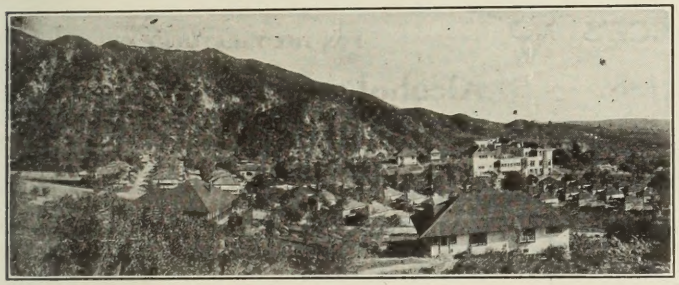
For Nervous and Mental Diseases, including committed and voluntary patients, Alcoholic and Narcotic Habitues.
A home-like private retreat, situated in a large park, Astoria, Long Island, opposite 108th Street, New York City. Accessible by carriage and trolley. Hydrotherapy, Electricity, Vibrassage, Massage. Golf Links, Tennis, Bowling, Billiards. Full equipment. Separate building for Drug and Alcoholic cases. Villas for special cases, including suites, tiled bath rooms, sun parlors, etc. Our own supply of pure water from deep wells, electric light, ice plant, etc. Eight buildings for thorough classification of patients—steam heat, etc. Arts and Crafts. Amusements. Rates moderate.

JNO. JOS. KINDRED, M.D., President and Treasurer. **WM. ELLIOTT DOLD, M.D., Physician in Charge.**
NEW YORK OFFICE: Sydenham Building, 616 Madison Avenue, Corner 59th Street. Hours: 3 to 4.

THE POTTENGER SANATORIUM

MONROVIA, CALIFORNIA

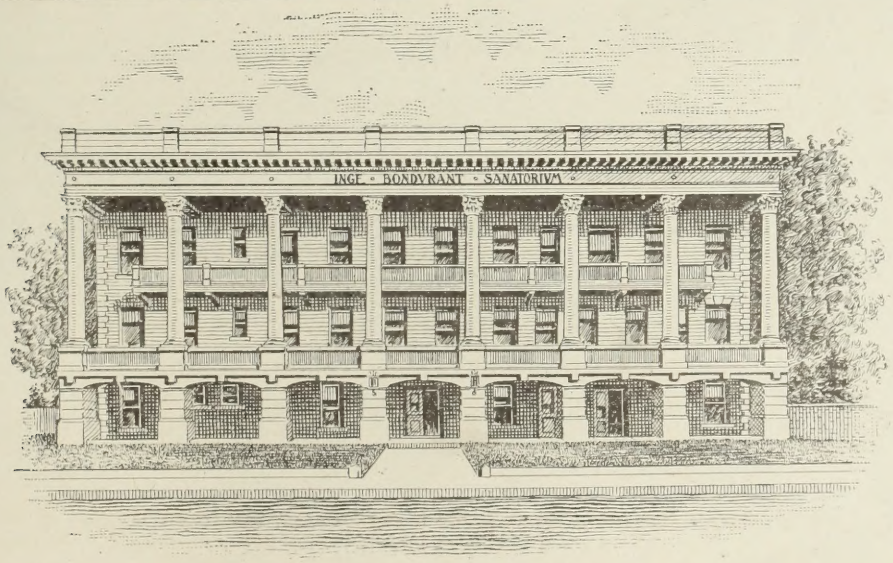
FOR DISEASES OF THE LUNGS AND THROAT.



A thoroughly equipped institution for the scientific treatment of tuberculosis. High class accommodations. Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery. Forty-five minutes from Los Angeles. F. M. Pottenger, A.M., M.D., LL.D., Medical Director. J. E. Pottenger, A.B., M.D., Assistant Medical Director and Chief of Laboratory. For particulars address:

POTTENGER SANATORIUM, Monrovia, Cal.

Los Angeles office: 1202-3 Union Trust Bldg., cor. Fourth and Spring Streets.



INGE-BONDURANT SANATORIUM, Mobile, Ala.

A modern private hospital for the treatment of general medical and surgical cases, nervous and mental diseases, inebriety and drug addiction. **BUILDING**—Recently enlarged and completely renovated and refurnished. Steam heat, electric elevator, rooms with private bath. Accommodations for 40 people. **EQUIPMENT**—New surgical operating room, tile floored and completely equipped for surgical and gynecological work. Electric operating room, with galvanic and faradic wall plate, therapeutic lamp, vibrator, X-ray apparatus, etc. Therapeutic bath room, with all needed apparatus for shower, needle, douch, sitz and general bath, electric baths, etc. Training School for Nurses offers a two-years' course of instruction in general nursing. Address Dr. H. T. INGE, General Medicine and Surgery, or Dr. E. D. Bondurant, Nervous and Ment .l Diseases, Inebriety and Drug Addiction.

DR. BOARD'S SANATORIUM

LOUISVILLE, KENTUCKY

A quiet, homelike institution for the treatment of mental and nervous diseases, drug and liquor habits. Conveniently located on Sixth Street just opposite Central Park. Grounds shady and attractive, building a model private hospital, treatment as applicable to each individual patient; nursing intelligent and tactful.

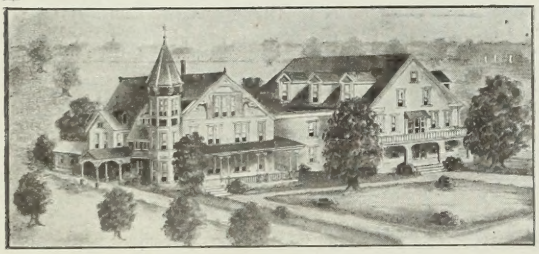
Terms: 20 to 35 dollars per week, special rates to physicians, ministers and chronic cases.

References: The medical profession of Kentucky.

DR. MILTON BOARD, 1412 Sixth St., Louisville, Ky.

DRS. PETTEY & WALLACE'S SANITARIUM

958 S. Fourth Street MEMPHIS, TENN.



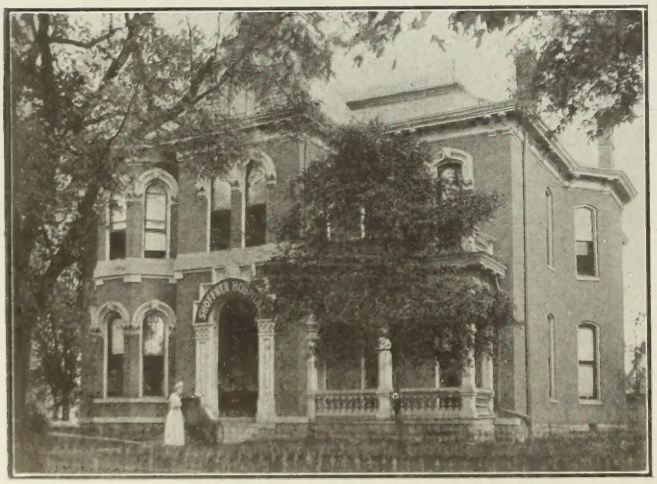
FOR THE TREATMENT OF

Alcohol and Drug Addictions
Nervous and Mental Diseases

A quiet home-like, private, high-class, institution. Licensed. Strictly ethical. Complete equipment. New building. Best accommodations.

Resident physician and trained nurses.

Drug patients treated by Dr. Pettey's original method under his personal care.



Shoffner Hospital

NASHVILLE = TENNESSEE

Quiet, homelike surroundings, with all Hospital conveniences and equipment. All operative cases, fever cases and a limited number of obstetrical cases. Address

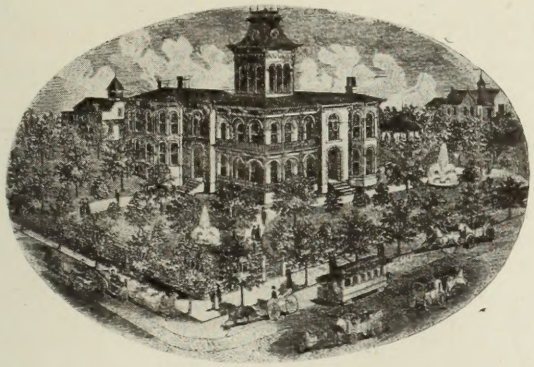
Shoffner Hospital

TEL. M. 2897 11 LINDSLEY AVE.

The Douglas Infirmary

Second Avenue, South, and Peabody

NASHVILLE, TENN.



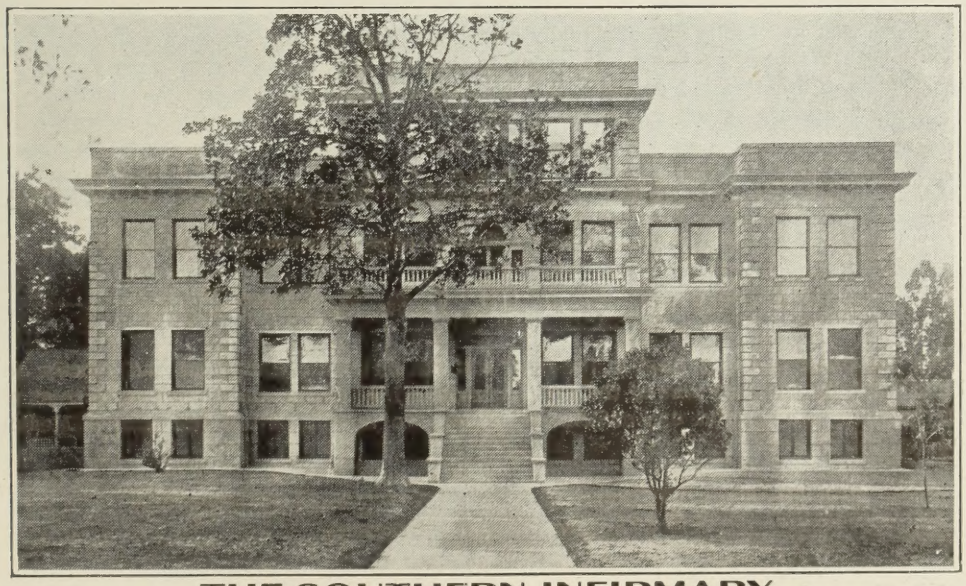
Established in 1890, will be continued under the conduct of Drs. Lucius E. Burch and John Overton.

Arranged especially for the care of surgical and gynecological cases, with provision for a limited number of medical and obstetrical cases.

No one suffering with a contagious disease, and no insane or colored patients admitted.

Building is situated very pleasantly, being in a quiet, elevated part of the city and easily reached by the street cars. Has all necessary equipment for a hospital with the appearance and comforts of a home.

May be reached by long distance 'phone, Main 1394. Arrangement made for ambulance service when desired.



THE SOUTHERN INFIRMARY

MOBILE, ALABAMA.

Pleasantly and conveniently located. Private rooms, modern in their appointments. Steam heated, well ventilated and lighted. Adapted for Surgical, Gynecological and Obstetrical cases. Insane and tubercular patients not admitted. School for Nurses. Rates moderate.

Under control and management of T. H. FRAZER, M.D., and W. R. JACKSON, M.D.

To the Medical Profession:

From all parts of the country I am receiving inquiries for information as to the treatment of

ASTHMA, BRONCHITIS, CATARRH

and other diseases of the Respiratory tract by means of the Muir Method of

MEDICATED VAPOR-INHALATIONS

as used extensively by leading members of the Medical Profession in Europe and introduced by me, in an improved form, into this country.

I WISH to make it quite clear that the only credit due me in connection with the great and growing succes and consequent interest taken in the matter is that of PERFECTING THE APPARATUS.

I spent some years investigating the various apparatus used in the great Continental Inhalatoria, and by a process of inventive selection, aided by expert mechanical workers here, at length evolved an Inhalation apparatus which really gives

AN INTENSELY FINE VAPOR SPRAY

one that will easily and effectually carry any desired medicament into the finest branches of lungs. In order to extend the use of this valuable mode of treatment, I am now in a position to supply any Medical men with the necessary apparatus, consisting of

Muir Table Inhaler and Muir Vaporizer Cabinet

(Made by expert and competent men under my own direction and personally tested by me before shipment)

Complete for $275.00, f. o. b. New York

The advantage of being "first in the field" with an up-to-date equipment and strictly ethical method fully equal to that of the great European Inhalatoria, and thus able to treat patients in your own district are sufficiently obvious to interest every progressive Medical Man.

Booklets, giving particulars of methods of treatment and description of apparatus, sent on request

DR. MUIR'S INHALATORIUM

47 West 42nd St., New York City (Tel. 1535 Bryant) JOSEPH MUIR, M.D.

Just Ready

Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic

ILLUSTRATED

This work is a collection of papers by W. J. and C. H. Mayo and their associates at St. Mary's Hospital, Rochester, Minn., for the years 1905-1909. Many of these papers have been read before various medical societies, and all of them have been published in current medical literature. The chief reason for bringing them together in the present form is for convenience of reference. The original plan was to have the papers printed for private distribution only, but at the instance of numerous members of the medical profession the authors have consented to having the book placed on the market. The text is illustrated.

Octavo of 668 pages, with 226 illustrations. By WILLIAM J. MAYO, M.D., CHARLES H. MAYO, M.D., and their ASSOCIATES at St. Mary's Hospital, Rochester, Minn. Cloth, $5.50 net.

Cabot's Differential Diagnosis

FIRST EDITION SOLD IN FOUR WEEKS

Dr. Cabot treats diagnosis from the point of view of the *presenting symptom*—the symptom in any disease which holds the foreground in the clinical picture: the principal complaint. He so details diagnosis that each case will bring before your mind's eye a selected group of reasonably probable causes. Then by a process of elimination the probable causes are narrowed until the correct cause is found. In other words, Dr. Cabot follows the same procedure which you do when questioning and examining a patient in your office or the clinic—really the only practical way.

Octavo of 753 pages, illustrated. Presented through an Analysis of 383 cases. By RICHARD C. CABOT, M. D., Assistant Professor of Clinical Medicine, Harvard Medical School, Boston.
Cloth $5.50 net; Half Morocco, $7.00 net.

Mumford's Practice of Surgery

A SURGERY THAT IS DIFFERENT

This is in every sense of the word a *clinical surgery*—a surgery for the bedside, the accident ward, the operating-room. It is really an exposition of Dr. Mumford's own methods and technic—a *personal* surgery. A feature is the inclusion of *minor surgery*. **Dr. John B. Murphy,** Northwestern University Medical School, Chicago, says: "This work truly represents Dr. Mumford's intellectual capacity and scope, and presents in a terse, forceful, yet pleasing manner the live surgical topics of the day. It is in every particular up to date, and shows that rare quality of accentuating the essential and omitting the unnecessary."

Octavo of 1015 pages, with 682 illustrations. By JAMES G. MUMFORD, M.D., Instructor in Surgery at Harvard Medical School. Cloth, $7.00 net; Half Morocco, $8.50 net.

W. B. SAUNDERS COMPANY **925 Walnut Street, Philadelphia**

London: 9, Henrietta Street, Covent Garden Australian Agency: 430 Bourke St., Melbourne

Drink and Drugs

To give a drink or drug using man an even chance with one who does not.

Dr. Broughton's Sanitarium

2007 S. Main St., Rockford, Ill.

CALL, WRITE OR PHONE 536 FOR INFORMATION

Malaria and Its Manifestations

Is just what you need. A concise presentation of history, etiology, symptomatology and diagnostic methods. With most thorough and exhaustive methods of treatment of any work of its kind on the subject, containing the allopathic, alkaloidal, eclectic and physiotherapeutic treatments. Price $1.50.

Address DR. J. H. McCURRY, Grubbs, Ark.

New—Latest Editions of Recent Issues Prepaid

MEDICAL BOOKS ON EASY TERMS

$3.00 Per Month to Responsible Physicians

WILCOX
Treatment of Diseases

Based on 23 years experience—of great help to the practitioner. 932 pages. 2d edition revised. Cloth, $6.

FOREL
Sexual Question

A scientific, psychological, hygienic, sociological study, from the French. 536 pages. Cloth, $5.00.

KRAFT-EBING
Psychopathia-Sexualis

A Medico Forensic study from the 12th revised German edition. 617 pages. Cloth, $4.00.

JACKSON
Trachio-Bronchoscopy, etc.

Exploiting the new "tube method" of removing foreign bodies, by a pioneer authority. Large size, 200 pages, illustrated. Cloth, $4.00.

MURRAY
Osteopathy for the Physician

Its practical application to the various diseases. 335 pages, illustrated. Cloth, $2.50.

CORNER
Operations in General Practice

"Striking simplicity of style and diction."—Medical Record. 170 illustrations. 296 pages. $4.00.

McOSCAR
All-Around Specialist.

Giving the specialist's technique in every branch of medicine. 2d edition. 325 pages. Cloth, $3.00.

JUETTNER
Modern Physiotherapy

[illegible] works so complete on drugless therapeutic methods, including X-Ray. 520 pages, illustrated. Cloth, $5.00.

PARKE
Human Sexuality

The laws, anomalies and relation of sex, especial reference to contrary sex instinct. 495 pages. Cloth, $3.00.

TULEY.
Diseases of Children

Especially full on treatment of feeding and hygiene. 654 pages. Cloth, $5.00.

BAIN
Medical Practice

Each disease is prefaced with its Anatomy, Histology and Physiology. 1011 pages. Cloth, $5.00.

MASON
Office Treatment of Rectal Diseases

Making very plain the technique of medical treatment. 4th edition enlarged. 66 illustrations, 384 pages. Cloth, $2.50.

L. S. Matthews & Co., 3333 OLIVE STREET ST. LOUIS, MO. Medical Books

The Medico-Chirurgical College

OF PHILADELPHIA Department of Medicine

"In the rapidity and vigor of its growth is probably without a parallel in the history of medical schools." WHY? Because of its modern and practical method of instruction.

Most advantageously located in the heart of the medical center of America. It has Well-Planned and Well-Equipped Laboratories; its own Large and Modern Hospital; the finest Clinical Amphitheatre Extant; abundant and varied Clinical Material; a Faculty of Renown and High Pedagogic Ability.

Its Curriculum comprises Individual Laboratory and Practical work by each student; Free Quizzes by members of the teaching staff; Ward-Classes limited in size; Systematic Clinical Conferences; Modified and Modern Seminar Methods; an Optional Five-year Course. The College has also Departments of Dentistry, Pharmacy, and Pharmaceutic Chemistry.

Send for announcements or information to

SENECA EGBERT, M.D., Dean, Seventeenth and Cherry Streets, Philadelphia, Pa.

NEW YORK POST-GRADUATE

MEDICAL SHOOL AND HOSPITAL SECOND AVENUE AND TWENTIETH STREET

Courses in Diseases of Eye, Ear, Throat and Nose· Clinical Courses—of duration to suit the Student's needs, to be entered at any time, affording abundant material and actual practice, under constant instruction in small groups.

Cadaver Courses: Operative Surgery of the Eye (2 courses), Operative Surgery of Throat and Nose (2 courses), Operative Surgery of the Ear. Special Anatomical Study. Classes limited, duration from three to six weeks, and to be entered promptly.

Special Courses: Classes limited to two or four, three to six weeks' duration, given continuously as classes form.

Refraction	Pathology of Nose and Throat
Fundus Lesions	Laryngeal Technique
Histology and Pathology of Eye	Radiography for Foreign Bodies
Labyrinth Course	Intubation and Trachetomy
Operating Room Course Ear Dis.	Radiography of Sinuses
Bronchoscopy, etc.	Operating Room Course, Nose and Throat

For full information and descriptive booklets, address **FREDERRICK BRUSH, M. D., Medical Supt**

Medical College of the State of South Carolina

CHARLESTON, S. C.

MEDICINE AND PHARMACY

Next Session Opens October 1st, 1910.

Unsurpassed Clinical advantages offered by New Roper Hospital, one of the largest and best equipped hospitals in the South. Extensive outdoor and dispensary service under control of the Faculty. Nine appointments each year for graduates in medicine. Laboratories recently enlarged and fully equipped. Practical work for medical and pharmaceutical students a special feature. For Catalogue address

ROBERT WILSON, JR., M.D., Dean,
Cor. Queen and Franklin Sts., Charleston, S. C.

New Orleans Polyclinic

Post Graduate Medical Department Tulane University of Louisiana. Twenty-fourth Annual Session opens October 31, 1910, and closes May 27, 1911.

Physicians will find the Polyclinic an excellent means of posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory and cadaveric work. For further information, address:

CHAS. CHASSAIGNAC, M.D., Dean,
New Orleans Polyclinic,
New Orleans, La.

Postoffice Box 797.

The Birmingham Laboratory

915-20 Empire Bldg., Birmingham, Ala. Phones Bell 1499; Peoples 851,

A Clinical Laboratory at which various microscopic, chemical and bacteriological examinations will be made at reasonable charges. Special attention given to opsonic and vaccine therapy, microscopic examination of pathological tissue, the Wasserman serum test for syphilis and animal inoculation diagnoses. Conducted by J. P. Long, M.D., and C. E. Dowman, Jr., A.B., M.D.

All inquiries regarding prices, technique of preparing specimens for shipments, etc., will be answered promptly.

ORGANIZED IN 1881

THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL

214-216-218-220 E. 34th STREET, NEW YORK CITY. The First Post-Graduate Medical School in America.

FACULTY

John A. Wyeth	Francis J. Quinlan	Wm. Seaman Bainbridge
Andrew R. Robinson	W. B. Pritchard	A. Seibert
J. Riddle Goffe	C. H. Chetwood	C. G. Kerley
Brooks H. Wells	W. H. Katzenbach	James P. Tuttle
Robert H. Wylie	William Van Valzah Hayes	R. O. Born
D. Bryson Delavan	John A. Bodine	Royal Whitman
Robert C. Myles	Alexander Lyle	Arthur B. Duel

WINTER SESSION, SEPTEMBER 13, 1910, TO JUNE 15, 1911.

30,000 Cases treated annually as clinical material for demonstration. Hospital Wards open to students.

The Trustees and Medical Staff are now engaged in the erection of a new Hospital and School Building which will be provided with every facility for the successful treatment and demonstration of cases and with laboratories equipped with the most modern and complete apparatus for teaching scientific medicine. For particulars and catalogue, address

JOHN A WYETH, M.D., President or JOHN GUNN, Superintendent

PHOTO-MICROGRAPHS

Physicians who lecture, and contribute to medical literature, will be interested to know that their lectures and articles may be illustrated accurately and in the best possible manner.

Those who use the microscope extensively may now keep accurate photographic records of their slides.

Photo-micrographs may be had in black and white and in natural colors.

Mailing cases for your object slides, and directions for marking the desired fields will be sent on application.

FRANK SAYLES DART, 522 West 112th St., New York City

NEURALGIA

points unerringly to a loss of nerve vitality—a decreased resistance to irritating impulses.

CELERINA

gives prompt and positive relief, (1) by restoring nerve tone and (2) by making hypersensitive tissues less susceptible to painful stimuli.

CELERINA, as a consequence, not infrequently affords a pronounced and permanent surcease from neuralgic pain when other measures fail completely.

CELERINA is not a narcotic and its benefits are the result of its action as a reconstructive, not as an analgesic *per se*.

RIO CHEMICAL COMPANY
79 Barrow Street, New York

UNIVERSITY OF ALABAMA

SCHOOL OF MEDICINE

MOBILE, ALABAMA

An Integral Part of the University of Alabama

The Forty-fifth Session began September 19th, 1910, and continues for eight months.

Entrance Requirements—The completion of a four years' high school course, or other equivalent of 14 Carnegie units. Qualifications for entrance are passed upon by the Dean of the School of Arts and Sciences of the University.

Course of Instruction—Four years' graded course adapted as nearly as possible to the plan outlined by the Council on Medical Education of the American Medical Association. All time professors and instructors are employed to teach chemistry, histology, bacteriology, pathology and pharmacology. The work in the third and fourth years is essentially clinical and practical, being conducted largely in the College Dispensary and City Hospital, whose staff is selected by the Faculty during the college term. The fourth year students, divided into groups, examine patients, take case histories, make surgical dressings, assist in obstetrical cases and otherwise act as assistants to the medical and surgical staff. Especial emphasis is given to practical work in the clinical laboratories of the dispensary and hospital.

Buildings, Laboratories, Etc.—The recent liberal appropriations by the General Assembly of the State of Alabama and by the Board of Trustees of the University of Alabama have enabled us to completely remodel the commodious college building and to build and equip new laboratories, giving us unsurpassed facilities for teaching all branches of medicine. The rooms and equipment for teaching anatomy are unusually fine. Laboratories for physiology and pharmacology are now under construction and will be completed and equipped before September.

Clinical Facilities—The surgical amphitheatre has been recently remodeled and other extensive improvements are now being made in the City Hospital; making it one of the largest and best equippel charitable hospitals in the South. The new College Dispensary, endowed by the City of Mobile, also provides a large amount of material for clinical instruction. The Mobile Infirmary, now under construction, has a surgical amphitheatre for classes from the college. The Faculty is also represented on the staffs of the Providence Infirmary, Southern Infirmary and Inge-Bondurant Sanatorium, where groups of students are taken for instruction. The Mt. Vernon Hospital, in Mobile County, having 650 insane patients, provides exceptional advantages in psychiatry and in general medicine.

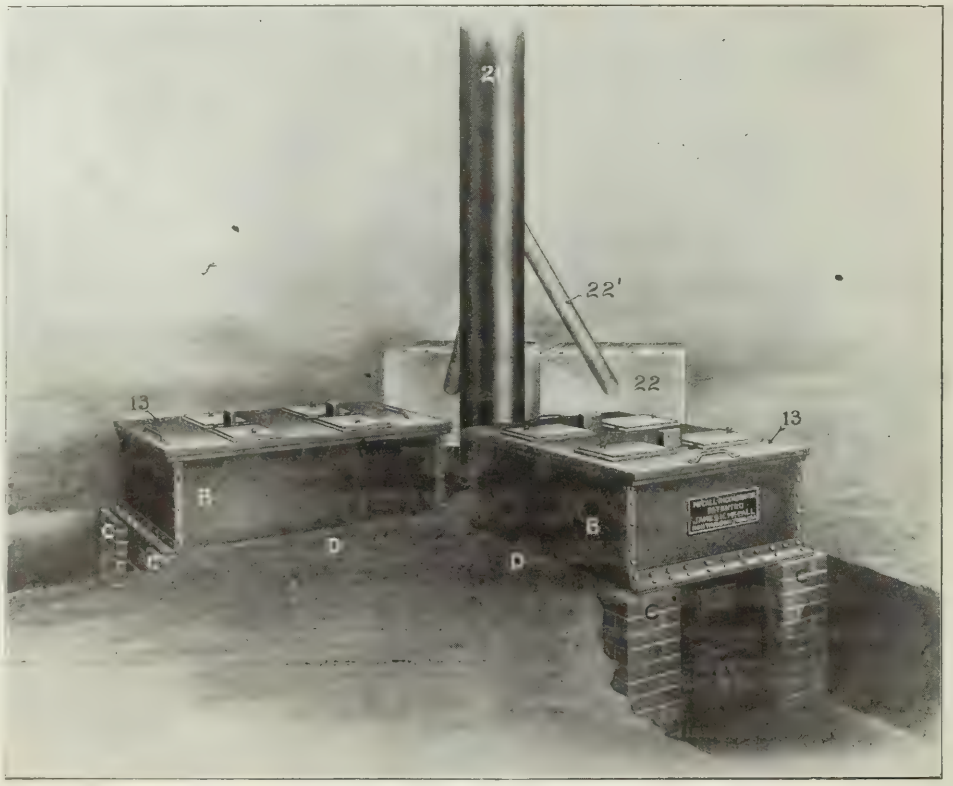
For catalogue and further information, address,

RHETT GOODE, M.D., Dean,

University of Alabama, School of Medicine — No. 58 St. Emanuel St., Mobile, Ala.

Have You Investigated The McCall Incinerator

for use in hospitals, asylums, camps, schools and similar institutions where the disposal of waste, excreta, etc., is a problem. This machine is very simple, is easily manipulated, and is very inexpensive in operation. It insures perfect sanitation, the absolute prevention of the dissemination of infectious diseases through waste products. Sanitary engineers everywhere are agreed that it is the most satisfactory aid to sanitation now in existence.



THE NEW YORK CITY BOARD OF HEALTH has adopted the McCall Incinerator where absolute sanitation is desired.

THE UNITED STATES ARMY has officially adopted this machine as a part of camp equipment.

Send For Descriptive Booklet

McCall Incinerator Company of North America

NASHVILLE, TENNESSEE

TWO THROUGH TRAINS DAILY

Making close connection at St. Louis

For Points North, Northeast and Northwest

Electric lighted Pullman Drawing Room Sleeping Cars and Dining Cars

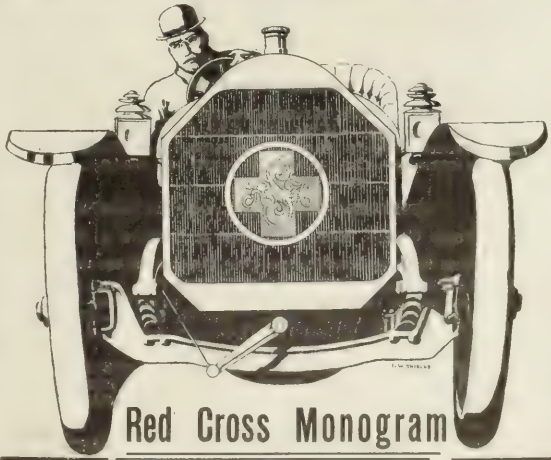
Mobile Office, 23 South Royal St. **Montgomery Office, 16 Commerce St.**

50% Better

Prevention Defense Indemnity

1 All claims or suits for alleged civil malpractice, error or mistake, for which our contract holder,
2 Or his estate is sued, whether the act or omission was his own
3 Or that of any other person (not necessarily an assistant or agent)
4 All such claims arising in suits involving the collection of professional fees
5 All claims arising in autopsies, inquests and in the prescribing and handling of drugs and medicines.
6 Defense through the court of last resort and until all legal remedies are exhausted
7 Without limit as to amount expended.
8 You have a voice in the selection of local counsel.
9 If we lose, we pay to amount specified, in addition to the unlimited defense.
10 The only contract containing all the above features and which is protection per se. *A sample upon request.*

The MEDICAL PROTECTIVE CO.
of **Fort Wayne, Indiana**
Professional Protection, Exclusively



Red Cross Monogram

Mark Your Car As That of a Physician

Get the RIGHT OF WAY in emergency cases.
The RED CROSS MONOGRAM does this.
It is a handsome combination of Red enamel—with monogram in polished brass.
It is a most practical accessory and accords perfectly with the dignity of your profession.
This is a high grade article in every respect. Do not confound it with any other Red Cross.
Send for Red Cross Booklet.

THE HICKOK MFG. CO.
32 Paul St. **Rochester, N. Y.**

I just want you to see my new journal!

PHYSIOLOGIC THERAPEUTICS

is a unique medical journal. It contains not less than 120 pages in each issue, appears bimonthly *and is devoted exclusively to treatment without drugs.*

It is one year old, and Vol. I contains over ONE THOUSAND original articles, reprinted articles, abstracts, translations, facts, queries, and a wealth of other valuable material. This 1910 bound volume will be sent prepaid to any address in the world for $2.00. Only a few copies left.

PHYSIOLOGIC THERAPEUTICS is a success, because it brings success to its readers---success due to increased special knowledge which spells better results, larger practice and increased income.

Three important features are always prominent in this live journal:

BREVITY —all the original articles are limited to fifteen hundred words. They are easily read.

PRACTICABILITY —technique is explained; it shows the "how" and the "why."

VALUE —over four hundred pages of the most helpful reading for One Dollar—5|-! Can you beat it?

Like our contemporaries we are fond of the word "only." Listen to this: PHYSIOLOGIC THERAPEUTICS is the *only* journal of its kind in the English language. *It stands alone.*

PHYSIOLOGIC THERAPEUTICS is the *only* medical journal in the U. S. that *regularly* issues a special *"Over-Seas Edition."*

PHYSIOLOGIC THERAPEUTICS is the *only* periodical devoted to the delineation of the progress in *all* the various branches of non-medicinal therapy, among which are:

Electrotherapy—electricity in **all** of its modalities
Vaccine Therapy—Wright's Bacterial Vaccines
Hyperemia—Bier's famous congestion treatment
Hydrotherapy—the scientific use of water, heat and cold
Radiotherapy—X-Ray therapy (and diagnosis)
Phototherapy—radiant and actinic energy
Crymotherapy—Carbon Dioxide ice or snow
Manipulation—including Massage, Swedish Gymnastics and Osteopathy

DIETETICS; CLIMATOTHERAPY; PSYCHOTHERAPY; HYGIENE; ETC.

What More Could You Ask for a Dollar a Year? See One Number and You Will Want More!

Here is a splendid special proposition to get you started:

1. **PHYSIOLOGIC THERAPEUTICS** for one year for a dollar ($1.25 in Canada or abroad) and a copy of a new and intensely practical book "VACCINE THERAPY IN GENERAL PRACTICE" —144 pages, cloth cover, worth $1.00—**Free!** In addition a practical monograph entitled "IMMUNITY IN TUBERCULOSIS" added for good measure. **A big dollar's worth**—and your money back if you say so.
2. **PHYSIOLOGIC THERAPEUTICS** for six months for fifty cents—(2|-) in stamps. Those outside of U. S. may send unused stamps of small denomination.
3. A complimentary copy—to show you how good it **really is.**

Use This Special Order Form Now

Henry R. Harrower, M.D., Managing Editor,
"PHYSIOLOGIC THERAPEUTICS,"
Schiller Bldg., Chicago, Ill.

CHECK HERE

○ 1. Please send me PHYSIOLOGIC THERAPEUTICS for one year—One Dollar is enclosed. ($1.25 in Canada or abroad). **Add exchange to personal checks!** Include with this absolutely free and postpaid VACCINE THERAPY IN GENERAL PRACTICE, and IMMUNITY IN TUBERCULOSIS.

○ 2. Please send PHYSIOLOGIC THERAPEUTICS for six months—enclosed is fifty cents in unused stamps (of any country).

○ 3. Please send me a complimentary copy—no obligations whatever. S.M.J.

NAME .....

DATE ..... ADDRESS .....

THE MARVEL SYRINGE

Was awarded the GOLD MEDAL, DIPLOMA and CERTIFICATE of APPROBATION

by the

Societe de Hygiene de France
at Paris, October 9, 1902

—for the—

MARVEL "WHIRLING SPRAY" SYRINGE

All Druggists and Dealers in Surgical Instruments Sell It.

As the latest and best syringe ever invented to thoroughly cleanse the vagina.

The Marvel, by reason of its peculiar construction, dilates and flushes the vaginal passage with a volume of whirling fluid, which smooths out the folds and permits the injection to come in contact with its entire surface, instantly dissolving and washing out all secretions and discharges.

Physicians should recommend the Marvel Syringe in all cases of Leuchorrhoea, Vaginitis and all womb troubles, as it is warranted to give entire satisfaction. It is a Marvel.

FOR LITERATURE ADDRESE **MARVEL COMPANY** NEW YORK

The DeMoville Surgical Department

UNDER THE MANAGEMENT OF AN EXPERIENCED INSTRUMENT MAN

We wish to announce to the profession that we are now in position to furnish you anything you may need in the instrument line on short notice. We carry a well assorted stock of instruments, dressings, hospital supplies, elastic stockings, abdominal supports, trusses, crutches, and, in fact, anything in this line. We carry only dependable goods. We are agents for the Kuy-Scheerer Co., Koch & Co., Becton, Dickinson & Co., Randall-Faichney Co., Bausch & Lomb Opt. Co., Victor Electric Co., The Electro Surgical Instrument Co., also other standard makers. We are in a position to furnish bids on hospital supplies and laboratory outfits of any size, and would be pleased to quote prices.

This department is under the supervision of our Mr. Henry Cooper, who would be pleased to call on you at any time to furnish any information you might desire or to answer any inquiries by mail or phone.

We respectfully invite you to inspect our stock. Make our store hea !quarters.

Out of town doctors are cordially invited to call on us for any information in person or otherwise.

We furnish graduated nurses any hour of the day or night; also Biological Products.

DeMoville Drug Company

Corner Church and Cherry -:- Nashville, Tenn.

OPEN DAY AND NIGHT **PHONES: MAIN 65-66**

The Trypsogen Treatment of Diabetes Mellitus

The experimental research work of the past ten years, has been devoted largely to a study of the digestive glands and internal secretions and has demonstrated that diabetes is a nutritional disorder probably due to deficiency of certain enzymes or secretions of the pancreas. On such a theory Trypsogen should be a rational treatment of diabetes. We are publishing a series of monographs on metabolism, covering recent work in the field of digestion and nutrition and will take pleasure in mailing copies of any or all of this series to any physician on request.

No. 1.—Diabetes Mellitus, Trypsogen Treatment.
No. 2.—Diet in Diabetes Mellitus.
No. 3.—Complications and Sequelae of Diabetes Mellitus.
Others in preparation.
Recent graduates in medicine kindly enclose professional card.

ANTITHERMOLINE

Relieves Local Pain and Inflammation

(APPLY EXTERNALLY)

Recent graduates, not in medical directory, kindly enclose professional card.

Now supplied in Glass Jars

Retail Prices

5-oz. Glass Jars	$ .25
11-oz. Glass Jars	.50
1¼-lb. Glass Jars	1.00
5-lb. Glass Jars	2.25

G. W. CARNRICK COMPANY

20 SULLIVAN ST., NEW YORK CITY.

SOUTHERN MEDICAL JOURNAL

PUBLISHED MONTHLY

Volume IV. NASHVILLE, TENN., MARCH, 1911 Number 2.

ORIGINAL ARTICLES

SOUTHERN SURGEONS AND SURGERY—BEFORE, DURING AND AFTER THE CIVIL WAR*

By W. O. ROBERTS, M.D.,
Louisville, Ky.

If you expect either science or surgery, technically speaking, in what I shall have to say, you are doomed to disappointment. To tell you anything concerning the achievements of surgeons during the year of grace just passed would be "carrying coals to New Castle," if not "gilding refined gold," for whatever new has been accomplished will be fully set forth, aired and discussed during the sessions of this meeting.

I have chosen to set before you the names of some of the masters in surgery, without whom the work of most of us would not have been done; therefore, I shall attempt, in an humble way, the role of historian and biographer: "for what is said of men, whether it be true or false, often occupies as much space in their life, and especially in their destiny, as what they do." Twice has Kentucky set up in the historic old town of Lexington a costly and beautiful statue of Henry Clay, and twice have the thunder bolts of Jupiter shattered it, but not all the thunder bolts and agents of destruction in the hands of ancient or modern devils can shake, or paralyze, or pulverzie his undying fame.

The more we talk and write about the great and their achievements, the better are we for the exercise, and the greater benefit we confer upon posterity. Few of the worthies of whom I shall speak have had, or will have, statues, or busts, or "storied urns" erected to their memory, but they all have and hold in their work, which they have handed down to posterity, the *monumentus aere perennius*—more lasting than bronze—more stable than marble.

In the annals of the first half of the Nineteenth Century four great and original names appear. They stand like snow-crowned peaks among the lesser mountains and hills resplendent in the sunset. These men all did original and some epoch-making work. Their deeds were done chiefly in Kentucky. Their names are Brashear, McDowell, McCreary and Dudley. They hold first rank among the pioneers of American Surgery.

WALTER BRASHEAR.

In 1806 Walter Brashear, of Bardstown, Ky., did the first hip joint amputation performed in America. Kerr, of North Hampton, England, in 1774 did the first, and the second was done by Larry in 1793. It is safe to say that Brashear had no knowledge of these operations.

He was born in Maryland in 1776. Eight years later his father journeyed to Kentucky, and cleared a little farm near Shepherdsville, Bullitt County. Dr. Brashear was not only a man of great skill in surgery, but added to this a fine literary taste, high culture, and executive ability. He was brilliant in con-

*Presidential address before the Southern Surgical and Gynecological Association, Nashville, Tenn., December 13-14-15, 1910.

versation, apt in oratory, and served his adopted State, Louisiana, in the Senate of the United States.

Of him Dr. David W. Yandell said: "His full nature like that river, of which Alexander broke the strength, spent itself in channels which led to no great name on earth, by a single exploit at the age of thirty he carved his name at high water mark among the elect in surgery. Most of his life thereafter, he wasted in desultory labors." He died at an advanced age at his home in Louisiana.

EPHRAIM M'DOWELL.

In 1809 Ephraim McDowell, of Danville, Ky., did the first ovariotomy, writing his name so high in the temple of surgical fame that time shall not tear it down.

It is needless in this presence to comment upon this unique and sublime achievement. Medical orators have waxed eloquent upon it on all fitting occasions since. Medical authors have written volumes about it, with which we are too familiar, and generations of surgical disciples have reverently followed in the master's footsteps. Hundreds of years have been added to the life of women, thousands of children owe their lives to this surgical procedure, and men of note in foreign lands have made long pilgrimages to lay their votive offerings upon his tomb.

CHARLES M'CREARY.

In 1813 Dr. Charles McCreary, of Hartford, Ohio County, Kentucky, did the first complete extirpation of the clavicle. The disease for which the operation was done was said to have been scrofulous. Recovery was slow but complete, and the use of the arm remained good.

In 1829 Professor Valentine Mott, of New York, repeated the operation, and supposing himself to be the first in the field, claimed the honor of the procedure for the United States, New York, and himself.

There is little known of the life and character of Dr. McCreary. He is said to have been a serious, thoughtful man, given to study, and devoted to his calling. He died at the early age of thirty-seven.

BENJAMIN WINSLOW DUDLEY.

Another pioneer in Southern surgery is Dr. Benjamin Winslow Dudley. He was born in Spottsylvania County, Virginia, April 25th, 1785. His family settled in Lexington, Ky., when the child was but one year old. He died in 1870 at the age of eighty-five. He was the son of a pioneer. He was raised in a small village in the midst of the Western wilderness. He was self-made. Like his great contemporary, Abraham Lincoln, he played flat-boatman that he might secure an education. He overcame all difficulties. He studied at the great schools of Paris and London, returning to Lexington in 1814 where he began a career almost unprecedented in the annals of surgery. His name and fame are the property of all, and it is not too much to say that hereafter, as up to the present time, no treatise on surgery will discuss Lithotomy without mention of his name.

These illustrious men were, as I have said, the pioneers of surgery in the South, particularly in Kentucky; but their labors closed with the middle or early years of the first half of the Nineteenth Century.

A ROLL OF FAMOUS NAMES.

Succeeding them was a goodly number of young surgeons, some of whom during our civil war pursued their calling in one or the other of the great armies engaged in that conflict. Prominent among them were Hunter McGuire, Bedford Brown, J. McFadden Gaston, Tobias G. Richardson, Paul F. Eve, W. T. Briggs, Warren Stone, Jno. T. Hodgens, Willis F. Westmoreland, H. H. Mudd, Samuel D. Gross, W. W. Dawson, P. S. Carson, J. Marion Sims, Robt. Battey, David W. Yandell, J. Billings, Claudius H. Mastin, A. W. Smyth, Josiah C. Nott and Crawford Long. A number of these worthies learned the art of surgery during our civil war, though some had attained distinction before. Some were not in the war, but they all constituted the

surgical corps of the South, and before and during the war, and for the first one or two decades after, they did practically the surgery of the South.

They were all accomplished physicians, as well as able surgeons, and with wonderful industry, learning and art, practiced successfully medicine *in its three great specialties* as laid down by Hippocrates, to wit: *medicine, obstetrics* and *surgery.*

Of these noted men, because of time limitations, I can select a few only for discussion.

In those days little beyond minor surgery was done by the country doctor. And even the physicians of the larger towns and villages sent their more important cases to the cities, where the men just mentioned performed the necessary operations.

The specialties of surgery during that period were merely taking form, or being slowly differentiated, and it may be truthfully said that these men, while practicing general medicine, and doing high class surgery, did much of the work now done by the specialists, and in short, helped largely to form and differentiate the specialties. They were indeed its true pioneers.

J. MARION SIMS.

The greatest of all American specialists, the most original and creative, was Dr. J. Marion Sims, who was born in South Carolina, but reared in Alabama. To him our first President, Dr. W. D. Haggard, pays the following tribute: "I know you will sustain me when I claim that Gynecic Surgery, with all its brilliant achievements, owes its present exalted position to the illustrious Sims, no less than abdominal surgery owes its origin to the world-renowned McDowell." . . .

"They conferred on America the honor of being the birthplace of Gynecology, and did more to alleviate the sufferings, restore the health, and prolong the lives of women than any other two men living or dead. To those who knew Sims personally he gave inspiration while he lived, and now that he is dead he has become a tradition; and his teachings, his example, and his labors have passed into history and coupled his name with the practice of an art which will illuminate the ages to come." . . .

As one star outshines another, so it was given to J. Marion Sims to transcend all of his compeers in the glory of his achievements."

PAUL F. EVE.

Another great Southern surgeon and pioneer specialist was Dr. Paul F. Eve, of Nashville, Tenn., whose achievements in daring and original work illustrate his inventive faculty, his knowledge of anatomy, his faith in the principles of surgery, his belief in himself, and his consummate skill. Of him Dr. J. A. Witherspoon says most truthfully: "No list of great surgeons and their achievements in the South would be complete without the name of that grand old surgeon, Paul F. Eve, whose character as a courteous gentleman, and broad knowledge as an ethical surgeon have done so much to stimulate men to high ideals and greater surgical ambition. This grand old man contributed many things to the field of surgery.

He was the first to make a successful hysterectomy; first to remove successfully the crista galli. It was he who first used the tendon of the deer as an absorbable suture, a lesson which made possible the catgut of today, and he was the first to relieve the deformity of the clavicle by use of the silver wire in recent cases. This, with his great reputation as a lithotomist, makes secure his fame among the galaxy of great surgeons of the past.*

Dr. Eve had conferred upon him the Presidency of the American Medical Association, and filled many important minor offices. During the absence of Professor S. D. Gross, Dr. Eve filled the chair of surgery in the University of Louisville, session 1850-51. He afterward became Professor of Surgery in the

*Southern Medical Journal, No. 1, Vol. 3, page 73.

University of Nashville, and declined calls to Eastern schools, because of his preference for the South and its institutions.

He is distinguished especially, however, as having held the office of army surgeon in two great wars. The first was the memorable final struggle of Poland for liberty in 1831. Being a student in Paris at this trying time, the wrongs and sufferings of the Poles so kindled the patriotism of his American and Republican soul, that he abandoned his studies and enlisted in the ill-fated Poland army. For this service he received the distinguished honor of the Golden Cross. His second term in army surgery was during our own civil war.

WARREN STONE.

Another great name in Southern surgery is Warren Stone, who was born in Vermont. He went South at an early age; but not until he had attained distinction in the North in dealing with the great epidemic of cholera, which in 1832 ravaged Western New York, Troy, Quebec and Montreal.

In December of the last mentioned year, he landed in New Orleans with only one picayune in his pocket, and in the midst of an epidemic of yellow fever, which was followed by cholera.

The new Charity Hospital had just been built, and its wards were crowded with the sick. The young physician secured the appointment of supernumerary in the medical department of the hospital, and soon after attained the position of assistant house surgeon. He was the first appointee to this office, and in this capacity served from 1833 to 1835, in which year he was elected house surgeon, serving until 1839, at which time he became visiting surgeon, and continued in this office until 1872.

It was in this institution that most of his work in surgery was done. He was an advanced surgeon of an old school. "He taught the principles of drainage in suppurative arthritis, in hepatic abscesses, and in pyothorax.* He was among the first, if not the first, to advocate the resection of the rib to facilitate drainage in suppurative pleuritis." A lecture of his on this subject it was once my pleasure to hear. In the surgery of aneurism he was most expert, and devised some operations, which with his achievements in lung surgery gave him fame.

He was, perhaps, the first to introduce the silver ligature, which he used successfully in the ligation of the common iliac artery. His reason for using silver was because of its "innocuous character," which statement in 1852 was one of the prophesies of aseptic surgery.

He retired from active work in 1872 because of failing health, and died soon after at the age of sixty-four.

W. T. BRIGGS.

W. T. Briggs, of Nashville, Tenn., is another name of note. He was born in Bowling Green, Ky., Dec. 4th, 1828. He graduated from the Transylvania University in Lexington, Ky., in 1848. He was made demonstrator of anatomy in the University of Nashville in 1852, in which year he had removed to that city. He was one of the founders of the American Surgical Association, and was its President in 1885. In that year he was chosen President of the surgical section of the International Medical Congress, which was held in Washington in 1887. He succeeded Paul F. Eve to the chair of surgery in the University of Nashville, Tenn.

He took a hand in all things promotive of surgery. He was a great lithotomist. Through his work as a practical surgeon and his writings, he achieved a commanding place among the surgeons of the South.

He once told me that he believed he owed his success and name as a surgeon to a grewsome surgical failure. At the time he was a young doctor practicing in a large country town. A man had sustained a fracture of the thigh bone, and Briggs was called to dress it. The result was a hideous deformity, which seemed to parade itself before him on

all occasions. He could never go out to make a call or take a walk for fresh air, that this testimonial to his bad surgery, or bad luck, was not either sitting on some veranda with his leg askew, or hobbling about the town with crutch or cane. Not more certainly did the satire of Robt. Burns drive Dr. Hornbook out of Tarbolton Parish than did this hobbling, limping, living surgical satire drive Dr. Briggs out of Bowling Green, Ky.; but with this difference: Hornbook took to drink, while Briggs took a strong grip on surgery, and scaled the heights of fame's dread mountain.

HUNTER HOLMES M'GUIRE.

Hunter Holmes McGuire was born in Winchester, Va., on the 11th of October, 1835. His father was Dr. Hugh Holmes McGuire, who "was a physician and surgeon of the older type," and was famous in all the region west of the Blue Ridge Mountains. He was an all-round surgeon, but gave special attention to the eye. His success in the surgical treatment of its diseases and deformities brought him many patients from near and far, and justly entitled him to be called a pioneer in, if not the first in, America to practice ophthalmology.

Dr. McGuire's mother was Ann Eliza Moss, of Fairfax County, Va., a descendant of Col. Joseph Holmes, officer in the Continental line. Dr. McGuire received his literary education at Winchester Academy, and later pursued his studies at a medical college in his native town, and at the medical schools of Philadelphia.

From 1856 to 1858 he was Professor of Anatomy in the Medical College of Winchester. At the close of the latter year, he went to Philadelphia to conduct a quiz class in conjunction with Pancoast and Luckett. It was during his sojourn in Philadelphia that the John Brown raid took place at Harper's Ferry. This incident or episode so wrought upon the sentiments of the many students of Southern blood in Philadelphia at that time, that young McGuire, then twenty-four years of age, induced three hundred of them to secede from the schools in Philadelphia and follow him into the South. This was a presage of trouble to come, small indeed, but quite as significant as the action of South Carolina in deserting the Union and firing the first gun upon Sumpter.

In this act the young medical student gave evidence of what afterwards was fully realized in his conduct during the war—that he was a born leader of men.

After a sojourn of something like two years in New Orleans, he returned to his birthplace in Virginia, and soon after entered the service of the Confederate Army under Stonewall Jackson, who made him his medical director.

Dr. McGuire at this time was not more than twenty-seven years old, a youth, hardly a man. "To his sense of just proportion this distinction appeared to be unfair to others of his profession, who, older and more experienced than himself, had from like motives entered the service. He pointed this out to General Jackson, and asked to be relieved, but his only solace was the stern reply: 'Sir, I appoint you.' And from that day on, till the "Dolorous Stroke" at Chancellorsville, there was no official report of a battle by General Jackson that did not contain express acknowledgment of the efficient service of Surgeon McGuire.*

In after years when crowned with honors, he used to say, with characteristic modesty: "The noblest heritage I shall hand down to my children is the fact that Stonewall Jackson condescended to hold and to treat me as his friend." The surgical skill, and masterful ability which Dr. McGuire displayed during his service in the war fully justified the estimation and esteem in which General Jackson held him.

"He humanized war by originating the custom of releasing all medical officers immediately on their capture." To him belongs the

*Hunter McGuire oration, delivered by the Hon. Holmes Conrad at the unveiling of the statue to his memory in Richmond, Va., Jan. 7, 1904.

credit of organizing the "Reserve corps of Hospitals of the Confederate army, and in perfecting the Ambulance Corps."

At the close of the war Dr. McGuire settled in the city of Richmond, where he held the chair of surgery in the Medical College of Virginia until the year 1878. In 1883 he founded St. Luke's Home for the Sick, with its attendant "training school for nurses" . . . which remains another monument to his wise sagacity and pious zeal.

In 1893 he was one of the founders of the University College of Medicine in connection with which was established the Virginia Hospital. Of each of these institutions Dr. McGuire was President, and in the college was Clinical Professor of Surgery. He was also one of the founders of the Medical Society of Virginia, which was organized in 1870. In 1880 he became its President.

"His chapter on the treatment of gun-shot wounds found a place in the standard works of his profession and obtained ready acceptance by the masters of surgical art the world over." He received many decorations, honorary degrees and preferments. The inscription upon the monument which was unveiled with fitting ceremony in Richmond on the 17th of January, 1904, pays just tribute to his worth as a physician, a surgeon, a citizen and a man.

"To Hunter Holmes McGuire, M. D., LL. D., President of the American Medical and of the American Surgical Association, Founder of the University College of Medicine; Medical Director, Jackson's Corps, Army of Northern Virginia; an Eminent Civil and Military Surgeon and Beloved Physician. An Able Teacher and Vigorous Writer; a Useful Citizen and Broad Humanitarian; Gifted in Mind and Generous in Heart; This Monument is Erected by His Many Friends."

We all knew him. He was the second President of this association, and truly its most eminent incumbent. Excepting the names of Jackson and Lee, no name was more reverenced by the Southern soldier and army surgeon, or more deeply fixed in the heart of the Southern people.

SAMUEL D. GROSS.

When the great critic Taine, in his discourse upon "The Writers of the Renaissance," came to consider Shakespeare, he wrote: "So now at last we are in the presence of one whom we perceived before us through all the vistas of the Renaissance, like some vast oak to which all the forest-ways converge. In order to take him in completely, we must have a wide and open space. He needs no praise but comprehension merely; he can only be comprehended by the aid of science."

Without hyperbole the foregoing may be said of the great master surgeon, Samuel D. Gross. Though most of his work was done in the East among Eastern and Northern surgeons, it must not be forgotten that much of it was done in Louisville, in whose University he held the chair of surgery for more than fifteen years.

I shall not attempt a biography of this most distinguished man, whose life, and whose achievements have been recited by masters in history and biography, and whose work belongs to the world. I shall try only to sketch his noble figure as we see him glory crowned adown the vista of a century.

He was born in Easton, Pa., in 1805. At the age of six he conceived the idea of becoming a physician. He was true to his purpose, and from that time, until he was gathered in like a full shock of corn at the ripe age of seventy-nine, he was true and unswerving to his purpose.

Of this he says: "If I was not a born doctor I was determined from my earliest boyhood to study medicine, and although I have sometimes thought I had mistaken my calling, I am not sure that I have done well in being a doctor, and living by men's diseases." After securing some preliminary education in the schools of his native town, and in the high school at Lawrenceville, N. J., he studied for a year with a preceptor, and in

1826 entered the Jefferson Medical College of Philadelphia, from which he graduated in due time. It is a significant fact that his thesis on this occasion was on the Nature and Treatment of Cataract.

He settled in Philadelphia. He encountered the usual discouragements of the young practitioner, but was able to secure bread and pay office rent through literary work. Having acquired some knowledge of French in his school days he translated a work on "General Anatomy" by Bailey and Holland, of Paris, just fresh from the press. He accomplished this work in two months' time, for which he received the sum of two hundred dollars. Later he translated Hatin's Manual of Obstetrics, for which he received seventy-five dollars. A copy of this book was sent with a polite note to the famous Dr. William T. Dewees, Professor of Midwifery in the University of Pennsylvania. Dr. Dewees did not acknowledge the courtesy, but said to a friend that while the author *might* be a promising young man, the faculty of the university would take no notice of anything that eminated from the Jefferson School. Truly history has repeated, and still repeats itself. With two more essays in the field of translation, Dr. Gross abandoned it and turned his attention to original work.

His first was The Anatomy, Physiology and Diseases of the Bones and Joints. This was published in 1830, and is truly a remarkable achievement for a young man of twenty-five. The edition reached two thousand copies. The work was never reprinted. He says he "labored day and night under the stimulus both of ambition and poverty."

In the fall of 1833 Dr. Gross became Demonstrator of Anatomy in the Ohio Medical College in which office and as lecturer on Surgical and Visceral Anatomy he "laid the foundation for the practical study of anatomy, which up to that time was a nominal matter in the Western States." He was also one of the editors of the Western Medical Gazette.

In 1835 he was made Professor of Pathological Anatomy in the medical department of the Cincinnati College of Medicine, which was organized in that year.

In 1840 Dr. Gross was elected to the chair of surgery of the Louisville Medical Institute, which afterwards became the University of Louisville.

Dr. Gross began his work as Professor in Louisville under most discouraging circumstances. Joshua B. Flint, the former incumbent, had been ejected. Flint had many friends in the college, and in the profession of the city, who turned upon Gross their batteries of abuse. He took no notice of this, and following faithfully the line he had marked out for himself, soon forged his way to the front. It is a tradition of the University of Louisville that Gross' first lecture on surgery in this school was upon Stone in the Bladder, which he illustrated by a lithotomy upon a living man before the class. It seems that Flint not long before had attempted the operation and failed to extract the stone. Gross after some pertinent remarks, on what he was about to do, extracted the stone tuto, cito, if not *jucunde,* and waving it aloft in the forceps before the class, said triumphantly: "When I *cut* for stone, I *get* the *stone.*" The applause was tremendous, several hundred voices joining in the chorus.

As I have said, though a large part of Gross' work was done in the East and the Southeast, much of it was done in Louisville, where he taught and lectured, and practiced medicine and surgery for about fifteen years. Of his great work, a System of Surgery, he says: "The work is founded upon the courses of lectures which devolved upon me to deliver during the last forty-two years. First in the University of Louisville, and later in the Jefferson Medical College of Philadelphia." The first edition was issued in 1859. It was hailed by physicians and surgeons the world over as the greatest work of its kind ever performed, and went rapidly through six editions.

Of Gross' original contributions to surgery

I can say little at this time. They were many, and are well known to us all. Like all men of genius, he thought and wrote ahead of his time.

In 1843 writing of Knife Wounds which penetrate or divide the gut, he advised that the external wound be widened sufficiently to admit to the surgeon's hooking up the injured bowel and after closing the openings to carefully remove effused matter with tepid water and the sponge. Dr. Gross arrived at this conclusion after making experiments upon dogs, and so may be considered the originator of what long years afterward became a classic procedure in surgery.

In 1883, just forty years after the prophetic utterance of Gross, I operated successfully upon a man who had received a knife wound in the abdomen. The instrument had penetrated the small intestine, making two wounds in it. The details of this operation were published in the American Practitioner in Vol. 19, No. 169, 1884, where due credit is given Dr. Gross for suggesting the operation. Relative to this Sir William McCormack in the Annual Oration on Abdominal Section for the Treatment of Intra-peritoneal Injury, before the Royal College of Surgeons, London, 1887, refers to my paper with the following remarks:

"Dr. W. O. Roberts, of Louisville, reports a case which shows how much can be done, under unfavorable circumstances, in wounds of the intestine. It is, I believe, the first successful case of the kind in America, and well illustrates the practice we should adopt." In closing my paper I wrote: "What Dr. Gross suggested more than forty years ago as applicable to knife wounds of the gut has been, as is well known, recently widened so as to embrace all penetrating injuries of the bowel; but the honor belonging to the entire procedure is now claimed by others. I submit that it belongs to Dr. Gross."

The surgeon who surveys Gross' masterpiece, *A System of Surgery*, with its more than two thousand pages, royal octavo, in small pica, and its fifteen hundred or more wood-cuts, illustrating every operation and pathological condition to date, stands in awe and admiration at the marvelous erudition here displayed, and the genius and industry of the man who could conceive of and complete such a work. It is true that it represents the study and labor of something like forty years, but when we take into consideration the fact that Gross was always a busy practitioner both in medicine and surgery, the occupant of a chair in a medical school which consumed much of his time, and engaged in the preparation and composition of numerous papers, monographs and minor treatises in surgery, the time would seem all too short for the production of such a colossal work. Gibbon's decline and fall of the Roman Empire is not more truly the noblest monumental achievement in history than is Gross' System of Surgery, the crowning work of surgical authorship. He was the Hippocrates of modern medicine.

DAVID WENDELL YANDELL.

Another conspicuous figure in the surgery of this epoch is David Wendell Yandell. He was born on the 4th day of September, 1826, at Craggy Bluff, six miles from Murfreesboro, Tenn. His grandfather, Dr. Wilson Yandell, was a noted physician of his time, and if tradition may be trusted, was probably the first surgeon in America who did a laparotomy for the relief of volvulus or intussusception. His father was Dr. Lunsford Pitts Yandell, "a scholar, a teacher, an orator, a writer of grace and power, a connoisseur in art, and a savant in science. To David descended the ancestral gifts in measure full and overflowing. In him was the culmination of the genius of the Yandell family."

Dr. Yandell's boyhood was passed, and the foundation of his education was laid in Lexington and in Louisville, where his father lived, and practiced and taught. In 1846 he graduated in medicine from the University of Louisville, and made his first tour to Europe, where he studied medicine in the great schools of Paris and London. His letters at that time

were published in the Louisville Journal, edited by Geo. D. Prentice, and in the Western Medical Journal, edited by Drs. Daniel Drake and L. P. Yandell, Sr. They attracted wide attention and elicited hearty encomiums from many, and especially from Prentice, who in those days was the dominant editorial genius of the South. Dr. Yandell showed not only talent for writing and a mastery of English, but a faculty for observation and a sympathy for human life truly remarkable in a boy of less than twenty summers, and these characteristics were marked through a long, useful, and brilliant career. A brief quotation from Yandell's presidential address before the American Medical Association in 1871 well illustrates his style as a writer, his sympathy with humanity, and his appreciation of his chosen profession with its beneficent influences:

"While returning from California a year ago, in company with a number of friends now present, the train stopped in the heart of the Rocky Mountains at a water tank, about which had been built by laborers and miners a few frame shanties. A man in the garb of a miner entered the car and asked if some physician on the train would not step over to his home and see a sick child? I went with him. The patient was a little boy suffering with some head trouble follownig measles. He was being calmed during the day by the bromide of potassium and soothed to sleep at night by the hydrate of chloral. In the pine-board hut hard by, occupied as home and office by the doctor of the settlement, lay a medical journal of the current month, from the pages of which he gathered the latest utterances of the masters and the newest therapeutic discoveries of the day. There in those mountain fastnesses, among the rude people, a thousand miles removed from the haunts of civilization, where in his lonely rides he saw more antelopes than fellow-men, and heard oftener the shrill yelp of the coyote than the voice of a friend, this hardy pioneer in our art rendered to the sick boy of the miner the same succor that was given by his more fortunate brother to the greatest and richest denizens of the cities, to the very princes of the earth themselves."

Dr. Yandell was in every sense a man of the world. No one knew better than he how to ingratiate himself with everybody from the highest to the lowest, from state, and literary, and scientific celebrities of the new and old world, to the boy who blacked his boots in the hotel or tavern, or the girl who passed him his food in the country log cabin on the hill slope or by the brook. If he had been a lawyer, he would have held high place among the statesmen of his country. He was a great hunter, and his rambles with dog and gun were taken in almost every State in the Union. Of him the Hon. Henry Watterson said: "Dr. Yandell was an undoubting and unflagging hunter for all game, from the homely quail to the grizzly bear himself."

He was a most charming conversationalist, an orator of great power, and a wit who would have been famous had literature been his calling.

Shall I give you a specimen of this wit? In a letter to Dr. Theopholus Parvin, his editorial partner, wherein he describes some incidents pertaining to the dinner which was given in Philadelphia in 1879 in celebration of the fifty-first anniversary of the entrance into the medical profession of Dr. Samuel D. Gross, he writes:

"Professor Agnew took the chair at eight o'clock. A moment before he took away my appetite by telling me that I was expected to reply to a toast. A timely notice that one is to get on his legs is allowable. No notice at all until you are called on is even better; but to knock the epigastrium entirely out of a man just as he takes his seat to fill the aching void left by a two days' journey, is a coarse cruelty which should be inflicted on no man. It turns bread to stone and converts the meat into a serpent. Don't you remember the group of unhappy-looking people you've seen at banquets; the men who ate nothing

and drank less, and with whom you couldn't, no matter what effort you made, keep up a talk, who wouldn't listen to you, and who gave you no opportunity of listening to them; the gloomy-looking chaps who seemed to wish they were at home in their little beds? Well, they are the men expected to speak, and who have been told so just as they took their seats." So much for wit.

He was an orator. The following from an address delivered at the dinner named, bears testimony of his eloquence. The words are in response to a toast to Kentucky and Kentuckians:

"I feel, Mr. Chairman, that it is an honor to be called on to speak on such an occasion and for such a people—a people who have given to statesmanship a Clay, a Lincoln, and a Breckinridge; to arms a Johnston, a Preston, and a Buckner; to surgery a McDowell and a Dudley. A goodly company! Stately names! Would you think me as exceeding the limit of good taste if I added, and chief among all these is that of him who bears the mark of our guild, Ephraim McDowell? For, sir, will not the labors of the statesman give way to the pitiless logic of events, the voice of the orator grow fainter in the coming ages, and the deeds of the soldier eventually find place but in the library of the student of military campaigns, while the achievement of the village surgeon, like the widening waves of the inviolate sea, shall reach the uttermost shore of time, hailed of all civilizations as having lessened the suffering and lengthened the span of human life.

"Again, would you think me very far wrong were I to couple the victorious issue of the late war and the operation of ovariotomy as in different fields the two most stupendous events of modern times? Sir! both are to be credited to Kentuckians.

"Mr. Lincoln effected the one, and Dr. McDowell accomplished the other. Nor yet, in my opinion, do the two achievements admit of comparison. Powerful cabinets, far-seeing ministers, renowned captains, a daring and multitudinous soldiery, a rich, a steady, a united and a persistent people contributed to the success of the former. Its glory was won amid the blaze of trumpets, the groans of men, the shock of contending armies. The glory of the other belongs to but one man, is single and indivisible, was won amid the smiles of fair women, and by the cunning of a single hand, which, unaided and alone, plucked victory from an enemy which, before McDowell's time, had defied all that was subtlest in art and repulsed every assault of science."

Dr. Yandell was the founder of the American Practitioner, which began its existence in 1870, and held prominent place in the medical literature of the South for more than sixteen years. He was elected President of the American Medical Association in 1871. In 1879 he made his second tour to Europe, where he was honored by many of the great surgeons and physicians of the old world, and was made a fellow of the London Surgical Association. In 1886 he was elected fellow of the Philadelphia College of Medicine. In 1887 he was appointed Surgeon General of the troops of Kentucky. In 1889 he became President of the American Surgical Association.

Dr. Yandell as a young man followed the calling of general medicine in Louisville, where he did a large practice, and won for himself much repute as a teacher of his art. It was at this time that he instituted the Stokes' Dispensary, which entitles him to the honor of being the first to establish clinical teaching in the West. His clinics were conducted privately in a little room on Green street, but soon after he was appointed to the chair of clinical medicine in the University of Louisville.

The civil war was now upon the country, and Dr. Yandell entered the Southern army. He was taken from the commands of Generals Buckner and Hardie by General Albert Sidney Johnston, who made him medical director of the department of the West. He

held this office until the close of the war, serving on the staffs of Generals Beauregard, Hardie, Joseph E. Johnston, and E. Kirby Smith. He was in the battles of Shiloh, Murfreesboro and Chickamauga. "He was always a soldier of soldiers, calm and brave in the face of danger, and unflinching in duty. His department was admitted to be the best ordered in the service."

At the close of the war Dr. Yandell made a master-stroke in the role of peacemaker.

"A meeting of the American Association was appointed to take place in Cincinnati in 1865. Between the victorious Unionists and the conquered Confederates the feeling was intense and bitter. The gap of friendship, already wide, was widening. Dr. Yandell took the initiative in 'shaking hands over the bloody chasm' with the Northern medical brethren. In a noble peace-making speech, wherein he nominated his 'great master,' Dr. Gross, for the presidency, he carried the day for harmony. Hatred was deposed and brotherly love enthroned."

Dr. Yandell held the chair of the Science and Practice of Medicine in the University of Louisville from 1867 until 1869, when he was made Professor of Clinical Surgery. As a surgeon he was pre-eminent. No man of his time did better or higher class work. He was a careful reader of home and foreign journals, and was always abreast with the times. His operations were characterized by a scrupulous cleanliness, which in post-bellum days was a prophecy of the since great triumphs of aseptic surgery. But it must not be forgotten that he was an all-round man, and throughout his long and brilliant career practiced medicine as well as surgery. He was not only *facile princeps* in surgery, but he was a physician and obstetrician of the highest order. He was apt in diagnosis, he knew the natural history of disease, and in the art of therapy, he displayed rare judgment and sound common sense. The maxim,

"Be not the first by whom the new is tried,
Nor yet the last to lay the old aside,"

was made for him.

He never followed fads, while quack and proprietary medicines, with their etimologically tortured names and doubtful constituents, had no charm for him, yet he never fell into the desuetude of therapeutic prejudice or old-fogyism.

Dr. Yandell composed no systematic work in surgery, but he was a frequent contributor to the medical journals of the country, and occasionally published articles in literary magazines. His addresses, editorials, letters, scientific and literary articles if gotten together, and well edited, would make a large and interesting work of several volumes. His style was terse, condensed, always to the point, and often rose to eloquence, if not to poetry.

The last appearance in public was the occasion of the delivery of the Doctorate Address of the medical department of the University of Louisville in 1892. This was his last contribution to medical literature. It was upon the subject of "Temperament." It is full of beauty and powerful reasoning. He who reads it cannot fail to see in it "the sage," the philosopher, the scholar, the teacher, and the philanthropist.

His death was caused by arterio-sclerosis.

Dr. Yandell was the pupil and beloved friend of Samuel D. Gross. He crystalized his master's memory in perhaps the greatest epitaph that was even written. Of this friendship between the pupil and master it was aptly and eloquently said: *"This epitaph engraved upon the tomb of Gross will stand as long as fame shall weave garlands for that immortal brow. Master and pupil were lovely and pleasant in their lives; let us hope that in their death they are not divided; for of them it may be said with far more reaching

*American Practitioner and News, April 15, 1899. Address by Professor Henry A. Cottell, M.D., "The Life and Character of Professor David W. Yandell, M.D., LL.D."

truth than of Saul and Jonathan, 'They were swifter than eagles; they were stronger than lions.'"

EFFECT OF THE WORK OF THESE PIONEERS UPON MODERN MEDICINE.

The pioneers of surgery had no well ordered operating rooms, and their successors, the surgeons of ante-bellum and post-bellum times had no laboratories to back or supplement their work. Gross, Yandell, McGuire, Stone, *et al.*, until Koch and Pasteur came to the front, knew nothing of the streptococcus or staphylo-coccus pyogenes-aureus and albus, no bacillus pyocyaneus foetidus, tubercle bacillus, plasmodium malariae, trepomona pallida, nor any of the thousand and one micro-organisms, vegetable and animal, with unpronounceable names, and malignant affinities for the flesh of man. And yet it may be said without disparaging the splendid work which the laboratory has done, for surgery much, and for medicine more, and which made Lister famous, and Listerism the Shiboleth of modern surgery, these masters had a learned and rational pathology under the teachings of Rokitansky and Paget, and achieved results which have made possible the brilliant work of their successors today.

THE FATE OF FAME.

Encomiums upon the lives and characters of the worthies I have named would be superfluous, were it not that calling up a-fresh from time to time the doings of such may tend to preserve their names and perpetuate their fame. Many who live today know personally the worth of some of them, and will leave traditions of their lives and work as a heritage to their children. Medical books and authors are short-lived and doomed to oblivion. A man's name, however, may be preserved for many years through foot-notes in books pertaining to his calling, or some disease or operation which he discovered or devised, and was made to stand sponsor for. But, while philosophers, poets, heroes, and conquerors, have place among "the few," "the immortal names that were not born to die," it is doubtful if even the eminent physician or surgeon will have any secure hold upon posthumous fame. His memorials may have been trusted to a book that has long since gone the way of "fools to dusty death." A paper or a chapter in a tome long forgotten, or a paragraph in a cyclopaedia which in time, some too discriminating editor may deem it his duty to scratch.

Sic transit gloria Mundi is true of the individual as of the world. These our noble predecessors, with perhaps two or three exceptions, will descend into the limbo of all but the elected few; but they have the *monumentum aere perennius* in their work which is a priceless heritage to us all, and shall go down through the generations to the end of time prolonging the life and promoting the happiness of man.

ON SOME OF THE FACTORS THAT INFLURENCE THE PROGNOSIS IN OPERATIONS FOR CANCER*

By G. W. CRILE, M.D.,
Cleveland, Ohio.

The observations that I shall make are based largely upon a personal experience of seven hundred and eighty-five operations for cancer upon various parts of the body. The factors that I shall discuss in this paper are:

Type of Tumor.
Age.
Physical State of the Patient.
Location.
Local Characteristics of the Growth That Give a Clue to the Prognosis.
Physiologic and Pathologic States of the Seat of Cancer.
X-Ray and Coley's Toxins.

*Read before the Southern Surgical and Gynecological Association, Nashville, Tenn., Dec. 13-14-15, 1911.

Time of Operation.
Certain Points in the Operative Technique That Affect the Prognosis.
Immediate Operative Cancer Implantation.
Special Technique.

Type of Tumor.—I have seen but one case of melanoma remain free from disease more than three years. This was a case of melanoma arising from a mole on the cheek with metastasis in the neck. The growth was locally excised and a complete block excision of the neck was made. In melanoma the slight local growth and the multiple metastases in various tissues and organs indicate the very slight power of resistance the body offers.

Myeloma sometimes appears as a tumor and thus far has proven uniformly fatal. Primary sarcoma of the lymphatic glands is in my experience uniformly fatal; so, too, has been the round celled sarcoma of the bones. Endothelioma, though strongly tending to metastasize in distant parts, especially in the bones, is occasionally cured, while giant celled sarcoma, as Bloodgood has shown, is all but benign. In the epithelial group the basal-celled tumors are least malignant and the spinal-celled type most malignant. As to the bearing the type of neoplasm exerts upon the prognosis one observes all gradations between the almost hopeless malonoma and the benign giant-celled sarcoma.

Age.—Carcinoma in the young and vigorous is rarely curable, while in lean and dessicated senility its virulence is low. The expectancy of life of youth and of senility free from cancer is reversed when both youth and senility are surgically treated for cancer.

Physical State of the Patient.—The prognosis in well nourished vigorous individuals or putting it in another way the more the patient has of youthful vigor the less favorable the prognosis. The florid, well-preserved, vigorous and youthful appearing subjects present a less favorable prognosis.

Location.—The greater the muscular activity of the affected part the greater the local spread by permeation and the more likely there will be glandular metastases. As examples, we have the high risk of the tongue and the low risk of the lip; the high risk of the lower rectum as compared with the sigmoid; the pylorus as compared with the caecum. Because of the difficulty of early diagnosis the visceral cancer presents a far less favorable prognosis than external cancers. The skin cancers, especially of the face in the aged, are almost all curable. Then again the relation of the original focus of cancer to the regional lymphatics markedly influence the prognosis. Cancer of the head and the neck, excepting the thyroid, almost without exception metastasizes in the collar of accessible lymphatics of the neck, while cancer of the breast so frequently metastasizes in the surgically inaccessible parts of the thorax or abdomen. The thyroid sometimes makes distant metastases—especially in bones. Again, cancer of the fundus uteri is less prone to metastases, and more curable than is cancer of the cervix. Of all the cancers excepting those of the skin in old age there is none as I believe so curable as the intrinsic cancer of the larynx. Here the disease, beginning in the vocal cords, is constantly speaking its presence—as it were, it is imploring everyone for help; hence, should always be recognized early; the lymphatic involvement is usually late and always local; the hyaline cartilage is impermeable to the cancer invasion; operation, if early, leaves a useful voice and but a trifling deformity, and even total laryngectomy presents but slight risk. This is the only cancer of the body that is presented to us in an impermeable accessible box and whose diagnosis is continually announced to us by its own mechanism within. Would that the abdominal cancers had so beneficent an orator!

Local Characteristics of the Growth that Give a Clue to the Prognosis.—The more the neoplasm tends to pile up a wart-like growth and remain local, the more favorable the prognosis; the more the growth permeates its host, and the earlier the metastasis, the less favorable. Then, too, the more the growth peameates its immediate environment—*i. e.*,

the cancer with a well-marked border is less dangerous than one whose border extends to an almost insensible boundary.

As illustrations I have cured no case of cancer of the breast in which the metastasized axillary glands were all small and hard and all were of about the same size, when even the glands at the very apex of the axilla are as large as the glands nearest the primary focus—all such cases died of thoracic metastases. On the other hand, cases in which the nearest glands were of larger size and but two or three involved, while the apical glands are normal, are rather curable.

As to local permeation, I have never seen cured a single case in which there existed a radiated permeation in the skin—whether by small nodules or whether diffusely causing the so-called pig skin. Quite the contrary holds in cases in which the cancer in the course of its growth from within finally involves the skin, but presents a rather definite boundary between healthy and diseased tissue.

Physiologic and Pathologic States of the Seat of Cancer.—Inflammation of the site of cancer, and mechanical disturbance by partial operation, exploration, or by injury or ordinary use of a part seems to increase the rate of growth. Likewise pregnancy causes a rapid increase in the rate of growth of a cancer of the uterus. But perhaps the most striking example of acceleration of growth and increase of virulence is in the incidence of cancer of the breast and lactation. I can never forget the striking example of a young mother, 24 years of age, handsome and a perfect example of physical development; while nursing her first born there appeared a lump in her left breast. It grew so rapidly that cancer seemed to be excluded. A frozen section taken under local anesthesia established the diagnosis. Despite immediate radical operation her downward course was not even temporarily halted. The chest rapidly filled and she died within four months after the first observation of the tumor.

X-Ray and Coley's Toxins.—I have used Coley's toxins in a rather large series of sarcomata, the diagnosis of which was controlled microscopically. This latter statement certainly requires a word of explanation. In the light of our present knowledge, I believe we are justified in entertaining a scientific doubt as to the finality of any microscopic diagnosis of sarcoma, especially in sarcoma of the lymphatic glands and of the tonsils. I need only cite the example of the difference of opinion on the same sections among the pathologic experts, and the cautious tone and genuine uncertainty of any first-class pathologist in giving an opinion as to certain type of sarcoma. Especially is one impressed by the influence the history of the case has upon the decision of the pathologist.

My conclusion is that ther si at present, at least, despite the prestige of the observer, no such thing as an absolute diagnosis of sarcoma of at least the lymphatic glands and the tonsils. Therefore a given case of sarcoma cured by any method has outstanding against it this irreducible minimum of doubt against the correctness of the diagnosis.

With this reservation, my experience with Coley's toxins is as follows: I have seen sarcomata of large size shrink to the vanishing point, then grow vigorously again. But in one instance I observed an inoperable spindle celled sarcoma of the ileum shrink down to a bony minimum where it has remained quiescent beyond three years. I saw two cases of sarcoma of the tonsil disappear under Coley's toxins—one patient died six months later without a return of the growth, and in the other patient no awakening of the growth has in the subsequent six months been observed. Then in cases of cures judged by the three or more years standard in which operation, the X-ray as well as Coley's toxins were used, it is impossible to estimate the role of each factor.

The value of X-ray in superficial skin cancer may be regarded as established, but in these cancers a good prognosis may also be

assured by several other methods, especially by excision. In cancer of the eyelid the X-ray is especially indicated. But the X-ray does not insure against glandular involvement because the X-ray kills only superficial cancer cells. I have in certain cases exposed open wounds immediately after operations, *i. e.*, the patient is, when possible, taken from the operating room at once to the X-ray room and a long seance given. Then on successive days treatments are given until a slight erythema appears; then the wound is closed by suturing the skin or by skin grafting. This method, I believe, improves the prognosis.

Time of Operation.—This is perhaps the most important single factor—cancers all have a curable stage—*early*. As an example, in my series of two hundred and six operations for breast cancer, those that were operated on while the cancer was clinically still limited to the gland tissue, above eighty per cent remained well over ten years. Early lip cancers by radical operations are nearly all curable—thus early operations everywhere when removed according to good standards are remarkably curative.

Certain Points in the Operative Technique that Affect the Prognosis.—I need not mention the importance of a wide inclusive excision—including the regional lymphatics. In cancer of the tongue the glandular involvement of the lymphatics on both sides of the neck, even when the primary focus is unilateral and small, requires a routine bilateral excision of the lymphatic glands in the submaxillary and along the entire jugular chain—not forgetting that all of the upper glands may escape and those as low down as the omohyoid alone be involved. When any cervical gland is involved the prognosis is greatly improved by a block excision of the entire gland bearing tissue on that side. In cancer of the stomach there is one objective sign which has in every instance I have thus far observed indicated a fatal prognosis. I refer to an increased muscular resistance over the site of the growth. In every instance the growth involved the peritoneum to which there usually is some adhesion. The following explanation of this phenomenon has occurred to me, viz.: pyogenic infection or mechanical injury of the mucosa causes no muscular rigidity, while pyogenic infection or irritation of the peritoneum may cause such rigidity. Therefore when the cancer reaches the peritoneum, especially if there are irritating toxins or slight inflamamtion, the mechanism causing the rigidity of the overlying muscles is adequately stimulated.

Immediate Operative Cancer Implantation. While immediate cancer implantation formerly occurred in many operations, the better technique of the present day limits this implantation principally to the open mucous membrane cancers. Of the mucous membrane cancers thus especially liable to implantation may be mentioned cancer of the lower rectum and anus, of the cervix uteri, and of the mouth. Of all such local implantations the most striking are seen in the vaginal operation for cancer of the cervix, and the usual operation for cancer of the mouth. The vaginal hysterectomy, without due preparation of the free surface in advance, is quite certain to carry its own defeat. Undoubtedly, if a hysterectomy be made with rough methods without adequate precautions against immediate implantation, the rich sowing of the fresh wound with cancer cells will result in an earlier cancer death than if no operation at all is performed. There is also sacrificed nature's zone of resistance to the extension of the cancer. Such operations play into the hands of cancer. Likewise an operation for cancer of the mouth, which is early followed by extensive involvement of the entire operative field is evidence of a rich cancer sowing. As it seems to me, one of the most important parts of these operations is that of effective precaution against cancer implantation. To this end a preliminary cauterization and X-ray exposure of the field, and the deferring of the excision a sufficient time to insure seems important.

Special Technique.—In cancer of the stomach in which there is great emaciation and prostration from vomiting, there is a factor that strongly improves the prognosis —that factor refers to the immediate technique. I can perhaps best illustrate this point by referring to its application in a concrete instance. A patient seventy years old, bedridden and starved, turned as a sort of last resort to surgical advice. Though unable to sit up in bed, I still felt that it was worth while making an effort by utilizing the remarkable efficiency of direct transfusion of blood which supplies immediate intravenous food, fills the blood vessels, raises the blood pressure, and hence increases the efficiency of all of the starved tissue of the body. The donor was a son and the transfusion was continued as needed during the operation which was performed under the beneficent nitrous-oxide oxygen anesthesia. At the first seance a simple gastro-enterostomy using the cobbler stitch was made; there being no anesthetic after effects, food was immediately given. Ten days later a resection of approximately two-thirds of the stomach under nitrous-oxide oxygen anesthesia was performed. The patient gained from the beginning and in three and a half weeks from the time of her first entrance into the hospital she was transformed from a state of starved somnolence requiring ambulance transportation to the hospital into a feeling of well being and able to walk. Her age while militating against the immediate operative result, was distinctly favorable as to the ultimate cancer prognosis. It is now nearly three years since her operation and she is in good health.

Recapitulation.—The observations in this paper are based on a personal experience in seven hundred and eighty-five operations for cancer of various parts of the body. The melanomata, the round-celled sarcomata involving bone and the lymphatics, are rarely cured; the mixed cell sarcomata are more frequently cured, while the giant-celled sarcomata are almost benign. In sarcoma Coley's toxins and the X-rays are deserving of further trial. The prognosis in sarcoma of the lymphatics and round-celled sarcoma of bones, and melanomata when at all disseminated is slightly if at all improved by operation. In epitheliomata the basal-celled is least malignant, and the spinal-celled most; when located in muscular organs the prognosis is not so favorable as when in most other localities. The incidence of pregnancy in cancer of the uterus, and lactation in cancer of the breast seriously increases the gravity of the prognosis; in glandular metastasis in cancer of the head and neck, if the cancer has broken through the capsule and invaded the deep planes of the neck, operation has little influence upon the prognosis; if the glands are palpable, block excision secures the local prognosis. Of all cancers in important organs, intrinsic cancer of the larynx should be most curable, because it early and constantly vocally calls attention to its presence, has but slight lymphatic connection, and presents itself in a cancer-proof box—a sort of safety deposit box. We possess at present virtually no means of modifying the prognosis in deep esophageal cancer. The most important factor in cancer of the viscera is early diagnosis. In the operation upon open cancers, immediate operative implantation is a strong factor in the prognosis. The post-operative use of the X-ray favorably modifies the prognosis. As to the immediate mortality, the newer methods for controlling the circulation and for preventing shock materially improve the prognosis. That operation most favorably influences the prognosis which takes into account all of our surgical resources and is performed at the earliest possible moment.

The constantly improving results should inspire renewed hope for cancer patients. Tumors in the cancer period of life should never be watched: thy should be surgically dealt with.

REPORT OF A CASE OF ANEURYSM, WITH A NEW METHOD OF LIGATURE OF THE LEFT SUBCLAVIAN*

By DR. J. GARLAND SHERRILL,
Louisville, Ky.

Ligature of either subclavian artery in the first portion has always been considered a serious undertaking and its mortality has been high. This is especially true of the left artery, as very few surgeons have recorded efforts at ligature in this portion. Colles, the Irish surgeon, who has the distinction of first tying the right subclavian in its first portion says: "This operation, difficult on the right, must be deemed impracticable on the left subclavian. For the great depth from the surface at which this vessel is placed—the direct course which it runs in ascending to the top of the pleura—the sudden descent which it makes from this to sink under the protection of the clavicle, and the danger of including in the same ligature the eighth pair of nerves, the internal jugular vein or the carotid, which all run close to and nearly parallel with this artery; these all constitute such a combination of difficulties as must deter the most enterprising surgeon from undertaking this operation on the left side." (Edinb. M. & S. J., January 1, 1815, p. 23.)

It is quite easily appreciable that a large aneurysm of the left subclavian encroaching upon the tissues of the neck would make ligature in the first portion both difficult and hazardous by the method usually employed. These facts taken in consideration with the high mortality of the operation upon the right side and the inability to obtain a cure by distal ligature have led me to study the possibility of attack from the posterior aspect of the chest. Previous to reaching this conclusion I had seen three cases of subclavian aneurysm, in two of which operation was refused, and in the third, which is recorded herewith, I applied a distal ligature with temporary benefit.

This patient, Mr. Z., white, 45 years of age, railroad employe, working as conductor in the terminal or in the claim office. Has done no heavy work; no specific history. He was referred to me in April, 1902, by Dr. E. N. Flynn, his trouble dating from December, 1900; it began like an attack of la grippe, with cough and pain in the chest. This pain has been constant with occasional exacerbations, and for some months has been located over the upper and anterior part of the left side of the thorax, extending into the neck and shoulder. The pain was of a throbbing, boring character. His voice was hoarse and he suffered from dyspnoea upon exertion; also occasionally had difficulty in swallowing. Opium and other drugs had no effect upon his pain and discomfort. He could attribute the condition to no direct cause, although in 1881 he was injured in a railroad accident and lost his left hand.

Examination revealed a pulsation over a space two and one-half inches in diameter at the upper part of the left side of the chest, extending out from the sternoclavicular joint. There was no episternal pulsation. Percussion over this space showed dullness and marked tenderness. Auscultation gave no bruit. The superficial veins of the upper part of the chest were dilated. The pulsation in the left brachial artery was felt with difficulty. Pulsation in the left carotid was not as marked as in the right. This was attributed to pressure from the aneurysm. The left arm was cooler than the right.

Diagnosis of aneurysm of the left subclavian was concurred in by Drs. Flynn and Weidner. Upon presentation of the rest cure

*Read before the Southern Surgical and Gynecological Association, Nashville, Tenn., Dec. 13-14-15, 1910.

of Tufnell and ligature, patient decided upon ligation.

Distal operation in the third portion was performed on April 21, 1902, without much difficulty. The pulsation could scarcely be detected on the day following and the pain had disappeared. Two days later his hoarseness had about disappeared. Tenderness still persisted over the dull area for one week, at the end of which time a limited pulsation could be felt at the second intercostal space, although there was no pulsation where it appeared before operation. The patient did fairly well until June 18, 1902, when he was

No. I. Aneurism of Left Subclavian Artery.

seized with haemoptysis and attacks of dyspnoea, and he died Sunday, June 22, no postmortem being allowed.

The result in the case just recorded led me to the conclusion that distal ligation would not prove satisfactory in treatment of aneurysm of this artery, because of the large number of branches which allow the blood to flow through the aneurysmal sac. Distal ligation, too, would have a tendency to increase the blood pressure in the sac and thereby hasten its further dilatation unless prompt coagulation should occur.

In January, 1910, a colored man, aged 30, was admitted to the hospital; family history negative; claimed to have been well, except chills and fever at the age of 19. Subsequently stated, however, that he had occasional pain in the chest since August, 1908. The latter statement was not elicited until after operative interference was done. Never had any specific disease.

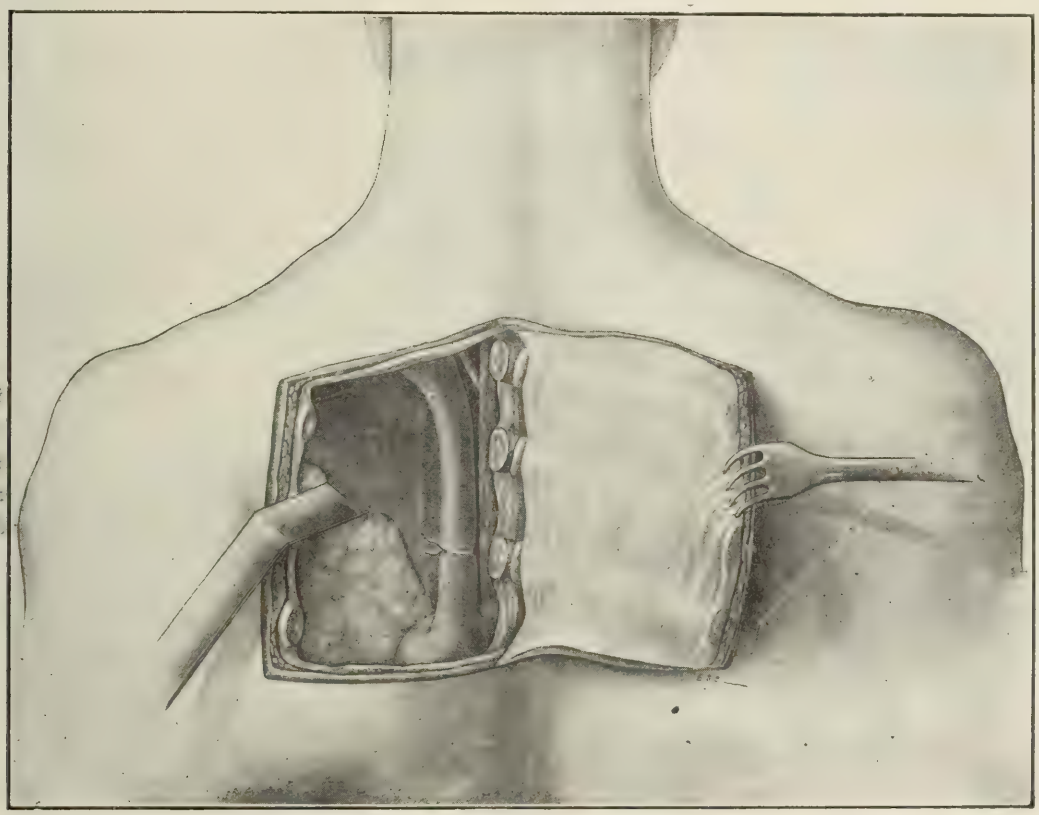
In August, 1909, he was injured in the subclavian region of the left side by a wagon crank; followed within one month by a swelling in the same region, which remained a few weeks and became smaller; to be followed in a short time by another enlargement in the same region, which also remained about a month and became smaller. The present tumor began to enlarge about December 15, 1909, and has gradually increased in size. The patient worked until Thursday before Christmas, at which time he discontinued owing to the fact that he could not obtain work, suffering no discomfort from the tumor but remaining in the house since that time. At present he complains of pain and tenderness in the left shoulder, also has tenderness just above the spine of the left scapula and in the left axilla.

When I first saw him, about January 1, 1910, he had a pulsating tumor about the size of a small melon situated at the upper part of the thorax, extending from near the median line and just above the level of the clavicle downward and outward almost to the margin of the pectoralis major muscle. This tumor pulsated synchronously with the heart and was distinctly expansile in character. No distinct bruit could be heard over the tumor, but an accentuated second sound of the heart was easily detected. The patient had an almost imperceptible pulse in the left radial and it was delayed somewhat compared to that of the right radial. The pulse of the left carotid was synchronous with that of the right radial.

Patient had no tracheal tug; had no marked dyspnoea, although he was more comfortable sitting up in bed. He had no cough and no interference with deglutition or respiration. A diagnosis of subclavian aneurysm was made and the various methods of treatment were discussed with the patient and with several physicians in attendance.

Distal ligation of the subclavian was considered inadvisable owing to the distance the tumor extended out upon the chest, and also in the first portion of its course by attacking it from the posterior surface of the thorax, the patient decided to accept the latter method.

On January 27, 1910, the subclavian was tied a short distance from its origin at the aorta. The operation was performed in the following manner: An incision was made along the posterior margin of the scapula about four inches long, dividing the skin and the muscles attached to the posterior portion of this bone. It was joined by an incision run-



No. II. Showing Incision and Ligation of Left Subclavian Artery.

because we believed that this measure would not prove curative. Ligature in the first portion anteriorly was not to be considered owing to the position of the tumor, which would have interfered greatly with the accomplishment of that step. After discussing the merits of wiring the sac and the possibility of complete cure if we could successfully ligate the subclavian ning inward from its inferior extremity to the spinous process. A similar incision was carried from its upper end in toward the spine. The soft tissues were dissected from the ribs with the skin and all hemorrhage controlled. The second, third and fourth ribs were removed for a distance of about three inches. The intercostal muscles were lifted off the

pleura; the latter was gently pushed downward and outward with the finger and the subclavian artery readily came into view as it left the aorta at the level of the fourth dorsal vertebra. A small opening was made in its sheath and the needle was readily carried around it and a No. 3 catgut ligature placed in position. At this point of the operation it was discovered by the assistants that the pulsation in the aneurysm did not cease. We then discovered, much to our disappointment, that the diagnosis as to the location of the aneurysm had not been correctly made. Further search revealed below the origin of the subclavian a rounded mass seemingly not larger than a small orange, which was pulsating. On discovering this we decided that the ligature upon the subclavian being useless should be removed. This having been accomplished the wound was closed and the patient left the table in good condition, and within an hour he was conversing freely with the attendants in the ward.

Patient died on the 7th of February, 1910, on raising up suddenly in bed to eat his meal, although positively ordered not to make any sudden exertion. The postmortem demonstrated an aneurysm of the arch of the aorta in its lower portion, which had ruptured into the esophagus. While we failed to accomplish the object desired in this case, the cure of the subclavian aneurysm, yet we feel that the procedure employed is feasible and an easy method of access to the first portion of the left subclavian.

This artery, to our knowledge, has only been tied successfully three times anteriorly in the first part of its course on the left side, by Halsted, Schumpert and Jungst; Dr. J. K. Rodgers, of New York, tied this vessel in 1846, but the case terminated fatally on the 15th day of secondary hemorrhage. Sir Astley Cooper abandoned the attempt to tie this vessel, thinking that he had wounded the thoracic duct.

Halsted states that the first part of the right subclavian has been ligated twelve or more times with fatal result in each case.

B. F. Curtis reports case of successful ligature of the first portion of the right subclavian for aneurysm in the third part. He thinks this is the first case on record in which this part of the subclavian had been successfully tied in its continuity and states that according to Souchons carefully selected statistics sixteen cases have been recorded, all but two on the right side, with sixteen deaths; in two of the cases the carotid also being secured. In this enumeration he does not include Halsted's successful case of preliminary ligature of the left subclavian before extirpation of a large axillary aneurysm. All of the deaths are due to secondary hemorrhage or other septic complications.

Tuffier ligated the subclavian in a woman for intra and extra scalenous aneurysm. There was considerable induration which made successful issue doubtful, but three months later this had entirely disappeared and cure was complete.

The case reported by Jungst, which has some features of interest, was performed for a gunshot wound in the left side of the neck. An incision was made down the neck parallel with the sterno-cleido-mastoid muscle, meeting another at the sterno clavicular joint, passing directly outward along the clavicle. The inner third of the clavicle and the manubrium were resected subperiosteally. The left carotid was sought and followed downward to the arch of the aorta and there the subclavian artery was laid free and tied with a silk ligature one and one-half to two centimeters from its origin. This did not control the hemorrhage and a second ligature was placed on the distal portion of the vessel at the first rib. Recovery was tedious, with paralysis of the left recurrent nerve; voice was loud and harsh.

The left subclavian artery has been tied in its third portion, for aneurysm, four times—by Lizars, Warren, Dalton and Codrington, with recovery in each case.

It has been tied in the third portion of its

course, for traumatic aneurysm, seven times—by Suckley, Watson, Church, Bowcock, McCausland, Parthey and Matthiolus, with recovery in the four last cases.

J. H. Armsby reports three cases of ligation of the subclavian artery, in the upper and middle portions of that vessel; one for aneurysm, one for bullet wound and one for rupture from muscular exertion. All recovered.

He says the subclavian has been tied in its first division thirteen times with one recovery; in its second division nine times with four recoveries; in the third 164 times with 83 recoveries.

From a study of the reported cases and my own work, the following conclusions seem to be justified: That ligature of the subclavian artery in the first portion on the right side shows a higher mortality than on the left. This is probably due in part to the short distance between its origin and the first branch, and also to its close relation to the pneumogastric nerve, thoracic duct, and the internal jugular vein. The mortality of ligature in the second division is 55.5 per cent.; in the third division about 50 per cent. The mortality is greater when ligature is done for injury to the vessel than for aneurysm.

With present methods the mortality of ligature in any portion of the subclavian should be greatly reduced, as is shown by recent results of Halsted, Schumpert, Jungst and Curtis. Distal ligation has not proven satisfactory. When the aneurysm is situated high on the axillary artery or upon the distal portion of the subclavian, the anterior operation should be employed when the vessel is accessible. The method here described is offered for the treatment of those cases in which the aneurismal tumor encroaches upon the tissues of the neck in such a way as to preclude the possibility of ligation by the anterior method. I have found that at the origin of the left subclavian from the arch of the aorta there is no danger of including the pneumogastric nerve in the ligature or of damaging the thoracic duct.

BIBLIOGRAPHY.

Colles: Edinb. M. & S. J., Jan. 7, 1815, p. 23.
Halsted: Johns Hopkins' Hosp. Bull., 1892, III. 93.
Schumpert: Gray's Anatomy, 1905, p. 636.
Jungst: eitr. z.B Klin. Chir. Tubing, 1902, XXXIV,, 307.
Rodgers, J. K.: N. Y. Hosp., Oct. 14, 1845.
Curtis, B. F.: Annals of Surgery, 1898, XXVIII., 540.
Tuffier: Bull. et Mein. Soc. Chir. Paris, 1901, XXVII, 312.
Lizars: Lancet, Lond., 1834, II., 717.
Warren: J. M.: Am. J. M. Sc., 1849, XVII, 13.
Dalton: Tr. Wisconsin State M. Soc., 1869, II., 74.
Codrington, O.: Army Med. Dept. Report, London, 1878, XX., 267.
Suckley, G.: N. Y. Med. Times, 1852, II., 202.
Watson, J.: Am. J. M. Sc., 1851, XXI., 294.
Church, W. H.: Am. J. Med. Sc., 1865, L., 395.
Bowcock, J. W.: Med. & Surg. Rep., Phila., 1880, XLII., 134.
McCausland, R. B.: Med. Press & Circ., Lond., 1898, LXVI., 621.
Parthey: Deutsch. Med. Wochschr., 1901, XXVII., 616.
Armsby, J. H.: Trans. Med. Soc., Albany, N. Y., 1870-80, III., 68.

COMPLETE ABSENCE OF THE VAGINA—AN OPERATION FOR THF FORMATION OF A PLASTIC VAGINA*

By DR. ALEX. H. FERGUSON,
Chicago, Ill.

The creation of a vagina by plastic operation has not yielded uniformly satisfactory results. The procedure here presented does not pretend to produce a normal vagina, still, in two of the three cases to be reported a vagina has been formed which yields satisfaction to both husband and wife. The third patient, the last operated upon in this series, is now married and upon examination the capacity of the plastic vagina may prove as efficient as that of the first two cases.

I. The first patient was a very beautiful, charming, accomplished and attractive young lady, eighteen years of age. The external genitalia were fully developed with the exception of a complete closure of the vaginal outlet. She was engaged to be married and her mother, knowing that she had never menstruated, insisted that her daughter should submit to an examination. This was done with the consent of her fiancee. I reported to him that the girl had no vagina, probably no uterus or other internal organs of generation. In order to determine the extent of the condition, I advised an exploratory laparotomy. This operation would not only determine the complete diagnosis, but would afford an opportunity of observing the possibility of forming a vagina from the material present.

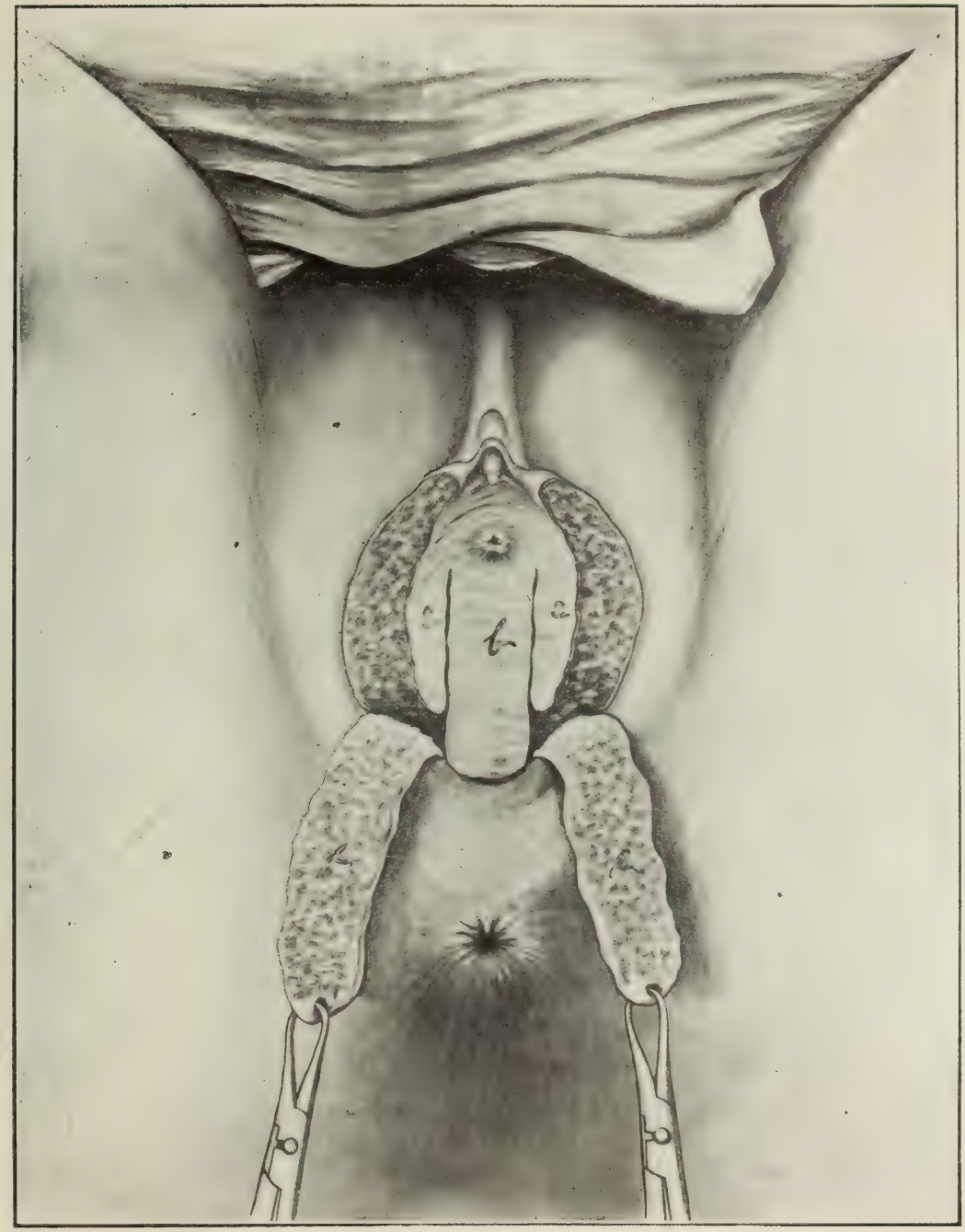
The abdomen was opened suprapubically in the median line, and examination disclosed complete absence of the vagina, uterus, left tube and ovary; a rudimentary tube and ovary were present on the right side. The first operation, as described below, was a failure; the second, the operation recommended in this paper, was a complete success, and the patient is happily married to the same young man. I might here interject that while coitus is not disagreeable to her, she does not enjoy any of the special qualities related thereto, being absolutely passive in this connection.

II. The second patient was also an exceedingly well developed young woman, 34 years of age. The breasts were large and sensitive, the external genitalia were fully larger than normal. She had been married for seven years, was exceedingly amorous, and marital relations with her limbs together was more satisfactory to herself than to her husband. She was referred to me for the removal of a chronically inflamed appendix; at the same time it was suggested by the local doctor that if I could do anything for her sterility they would be well pleased. The doctor had made a physical examination and was aware that she had no vaginal outlet.

The abdomen was opened through the right rectus muscle and the inflamed appendix removed. Further examination disclosed that the patient had neither vagina nor uterus. Rudimentary tubes and fairly well developed ovaries were, however, present. The large area of vulvular mucous membrane available made the plastic operation easy to perform and the result was highly satisfactory.

III. The third patient, recently operated upon, is a sister of the first. I examined this girl at the time I operated upon her sister, but on account of her youth, 15 years, and small vulva, I determined to postpone operative interference until she had reached maturity. The young lady went to Paris for accomplishments and returned a few months ago anxious to have the operation performed. Owing to the existence of chronic appendicitis—she had four distinct attacks—the abdomen was opened, the appendix removed, and the diagnosis made absolute regarding her internal organs. A small nodule, the size of a pea, represented

*Read before the Southern Surgical and Gynecological Association, Nashville, Tenn., Dec. 13-14-15, 1910.



NO. I.

a. Labia Minora Formed into a Flap. *b*. Central Flap. *c*. Strips of Mucus Membrane Left Attached.

her uterus, and there was no sign of a vagina. There were present two rudimentary tubes and two small ovaries. The labia minora in this patient were smaller and the mucous membrane less expansive than in the other cases. The result here obtained is fair. A slough at the apex of the left flap occurred and resulted in cicatrization at this point. For this reason the vagina is diverted slightly to the right, but may be satisfactorily straightened out. She was married last September

OPERATION.

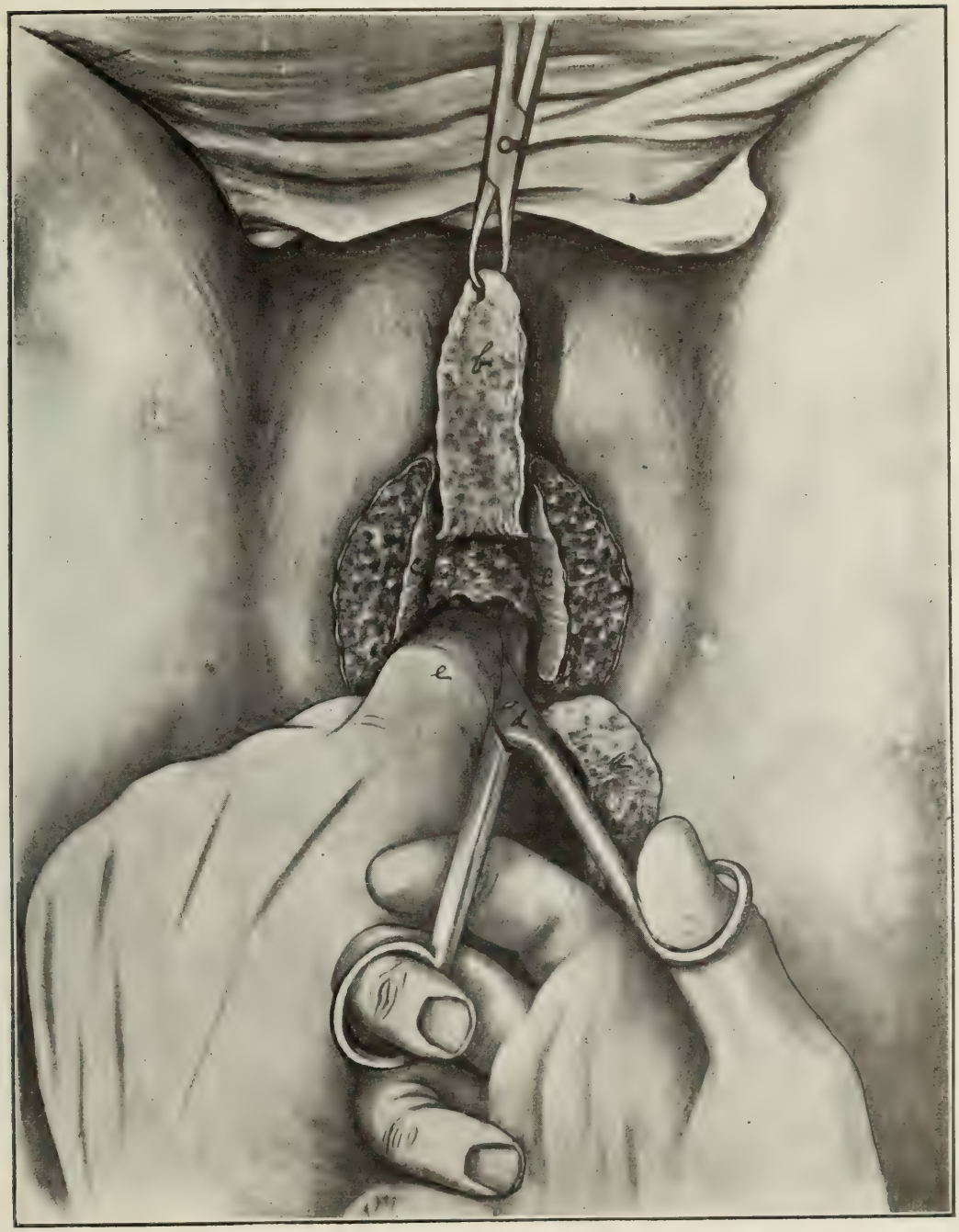
While the technic of the operation here recommended varied slightly in the three cases, still the principles underlying the procedure were the same, viz.:

1. To utilize the available mucous membrane.
2. To form three flaps.
3. To tunnel through the perineum, behind the bladder and in front of the rectum, dissecting the peritoneum from both these structures without opening the peritoneal cavity.
4. To invert the flaps into the tunnel thus formed and to suture them in place with catgut.

This illustration (Figure 1) represents the first step in the operation. It shows the manner of fashioning the flflaps and their extent, It will be noted that the lateral flaps include the mucosa of the labia minora on either side; care is taken, however, not to interfere with the mucous membrane in connection with the clitoris and meatus urinarius. The central flap, hinged at its base near the meatus urinarius, is made as thick as possible, especially at its base, in order that its nutrition may not be interfered with. The lateral flaps are formed with the same precautions in mind.

Figure 2 represents (*a*) the central flap raised upwards, (*b*) the lateral flaps fully liberated, (*c*) a stump of mucous strip membrane on either side which is not dissected up; it serves the double purpose of being sutured to the base of the labia majora on the outer side and to the borders of the lateral flaps on the inner. At this stage the anterior surface of the levator ani muscle on either side is sought and cut transversely to obtain an unobstructed tunnel through the perineum. If this is not done the new vagina will be hour-glass in shape. The peritoneum is separated from the rectum, pushing the former upward and denuding the anterior surface of the rectum as high up as desired. The rectum is dragged downward with double tissue forceps and a similar and careful denudation is made from the bladder. Space should be made to freely admit three fingers; the object should be to create a tunnel much larger than to receive a normal penis. Then a speculum is placed in the cavity and the rectum and perineum are retracted as well back as possible. The apex of the central flap is then sutured to the base of the bladder, as high up as possible, with three catgut sutures. The bladder is then allowed to drag the flap well up into place. The retractor is then turned towards the symphysis and the denuded rectum is dragged down into the field. The apices of the lateral flaps are sutured to the rectum with catgut; two or three sutures along the lateral margin of the flaps tend to prevent them from rolling up. There is no difficulty in spreading the lateral flaps like wings. The three flaps do not entirely cover the raw surfaces of the tunnel, the borders of the flaps are nowhere stitched together, except in front of the anus, where two sutures are placed to keep the flaps spread out. The fact that the flaps are not sutured together all the way renders the cavity dilatable to an ideal extent. Horse hair is used to close over the raw surface of the denuded areas.

An artificial penis is now made from a roll of gauze; this is covered with thin rubber. The length is about seven inches and the diameter about one inch and a half. The rubber is annointed with sterile vaselin and zinc oxide and the dressing is inserted into the plastic vaginal canal. The external end spreads out like a flange and is held in place by a firm pad. Two straps of adhesive plaster cross-



NO. 2.

a. Labia Minora Flap. *b*. Central Flap Dissected Up. *c*. Lateral Straps of Mucus Membrane. *d*. Scissors in the Act of Dissecting, Guided by the Finger. *e*. Index Finger Inserted Between the Bladder and Rectum.

each other at the center of the plug in such a manner as to avoid the meatus urinarius and the anus. The plug must not be constricted by the levator ani muscles and must not fit too tightly.

AFTER TREATMENT.

The initial dressing must not be withdrawn for six or eight days. During this time a careful nurse keeps the parts as aseptic as possible. A short, bulbous, retention catheter is left in the bladder unless the patient is thereby rendered uncomfortable. If this is the case the patient must be catheterized.

Very little nourishment is given while the plug is in situ—the patient is constipated by opium and, if necessary, by acetate of lead. Albumen water is an excellent form of nourishment in these cases and is only given by mouth. It is remarkable how the laudanum not only relieves the pain but allays hunger and thirst.

At the end of a week the flaps are adherent by granulations over their entire extent. The plug is now withdrawn and the vagina gently dilated with a glass speculum of suitable size or the electric proctoscope. Inspection is made of every part of the canal and it is cleaned with normal saline solution. If any antiseptic solutions are used epitheliazation will be interfered with, as it is in the use of Thiersch grafts. A similar plug is inserted every few days for three weeks. By this time epitheliazation is complete and the union of the flaps is secure by mature fibrous tissue. If exuberant granulation tissue appears during this time it should be leveled down with a solid stick of silver nitrate or sulphate of copper, and the plug again inserted.

Purgatives and a copious enema are given when the primary plug is removed. Later a respite from the plug may be allowed for a half day while the patient is being disturbed by cathartics.

To obtain ideal results the vaginal plug must be attended to by the surgeon.

The internal stitches are catgut and may be left to become absorbed or loosened. The horse hair had better be left in place two weeks.

In the after treatment of these cases *absolute cleanliness "without antiseptics"* is of primary importance. The patient must remain under observation for at least three months.

Figure 4 represents a median saggital section (diagrammatic) of the body after the formation of a plastic vagina.

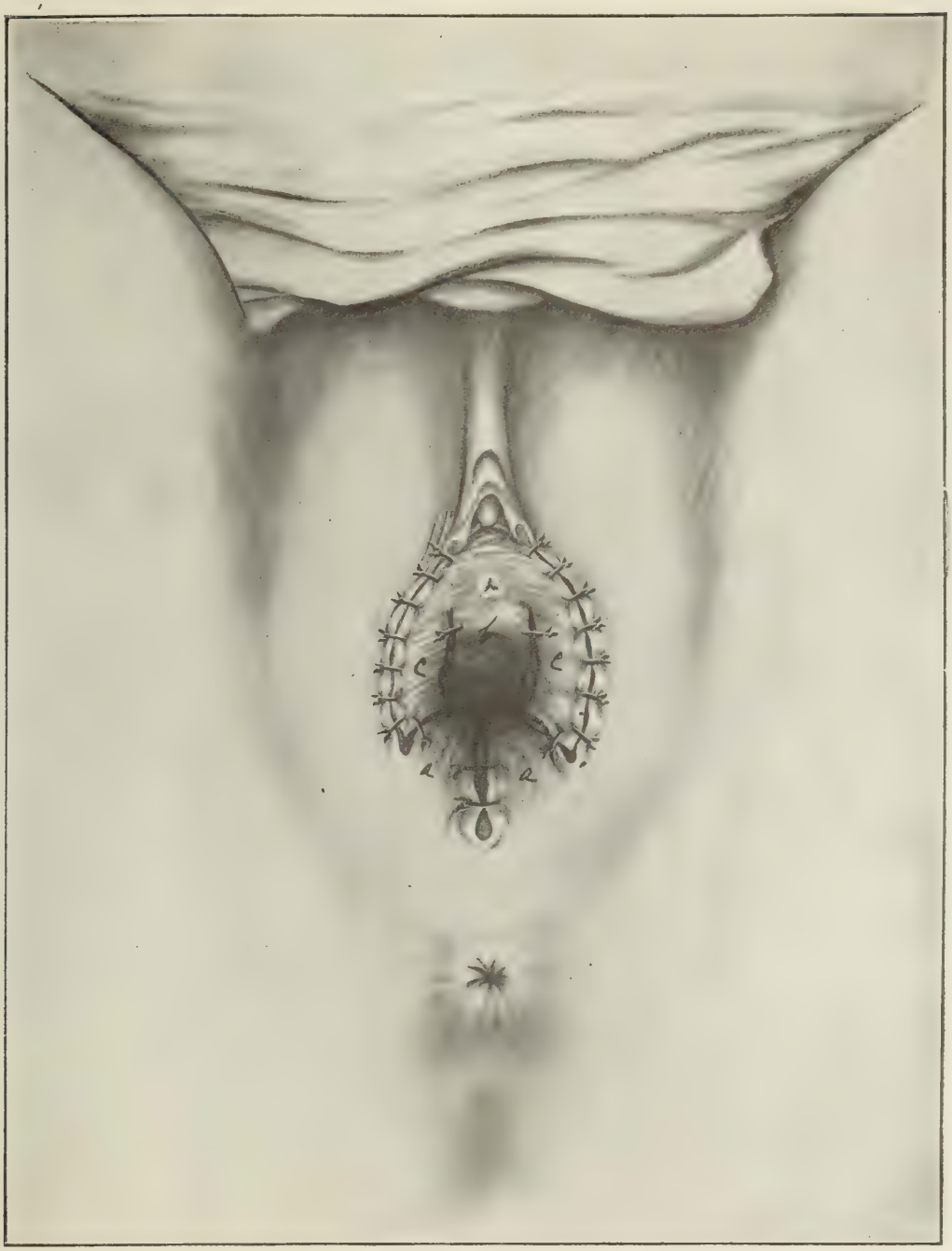
REPORT OF CASES.

Case No. 1: The patient, a young woman of 19, presents herself at my private hospital on December 28th, 1905. The patient is a well developed girl, weighing 150 pounds, who gives a history of never having menstruated. She is of a nervo-sanguine temperament, is very modest, in fact shy and bashful. The girl has suffered no ill health at any time. She is clever at her studies and requries very little sleep, almost bordering on insomnia. There is no molimia. Only the fact that she was engaged to be married and was not sure of her condition would lead her to consent to an examination. Her fiance said he would marry her anyhow and was not particular whether she was normal or not.

She was prepared for operation and an anesthetic given before the examination was made.

Physical examination: The breasts are large and full; there is abundant pubic hair. The mons veneris, labia majora and minora and clitoris are very fully developed. There is no trace of a hymen and in its place is a firm, thick mucous surface. Bimanual examination, with two fingers of the left hand in the rectum, and right hand pressing above the pubis could not detect any organs of generation. A large sound was passed into the bladder, its beak was turned toward the rectum to meet the fingers in the bowel. No uterus could be detected in this manner,

The abdomen was opened and a club-shaped appendix removed. The Trendelenberg position was used and the pelvic structures brought clearly into view. There was complete absence of vagina, uterus, left tube



NO. III.

This Drawing Shows the Horse-Hair Sutures Inserted and the Flaps Inverted to Line the New Vagina. *a*. Central Flap. *b*. Central Flap. *c*. Lateral Strips of Mucus Membrane.

and ovary; a rudimentary tube and ovary was present on the right side.

A circular incision was made in the mucous membrane surrounding the occluded vaginal outlet. The fingers were pushed up into the pelvis toward the rudimentary tube and ovary. The peritoneum covering the dome of this raw tunnel was not interfered with. The dome was stitched close to the rudimentary tube and ovary. The tunnel was packed with iodoform gauze and the abdomen closed. The gauze was removed in eight days and renewed. Various means were used to prevent contraction, but to no avail; at the end of two weeks contraction commenced. The only thing gained by the operation was an accurate knowledge of the congenital deficiencies in her pelvis and a small pouch for a vagina.

The second operation was performed May 23rd, 1906. Epitheliazation and complete healing had occurred. The operation and technic recommended above was again employed as above described. I paid personal attention to the after treatment. The patient left the hospital on the twenty-second day with a straight vagina, larger than normal at the outlet. She afterward married and is very happy. I made examinations of her, the last one on November 5th, 1909, and was able to pass two fingers full length well up into the plastic vagina. I then passed a medium sized Ferguson glass speculum about four inches long, with ease. She is capable of contracting the canal by the action of the sphincter vaginae and the levator ani muscles. The patient possesses no sexual desires, but is fond of being caressed and loved. In conversation with her husband, he said: "I am perfectly satisfied with my girl."

CASE 2.

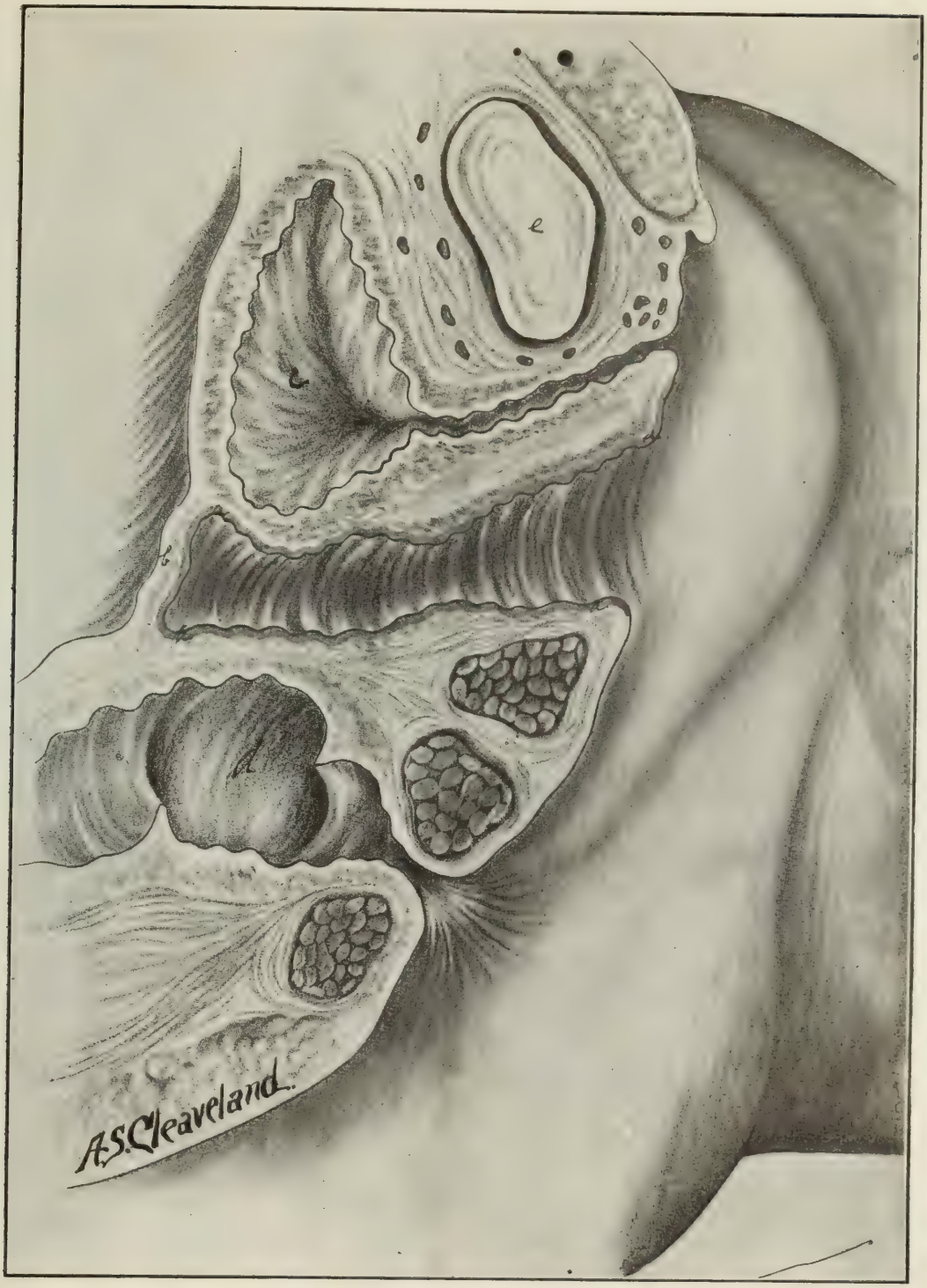
A florid, healthy woman was referred to me for the removal of a chronically inflamed appendix, and incidentally for sterility. She is the wife of a farmer and rancher, and often aids her husband in rounding up cattle. Being fond of out-door sports, she has become not only a splendid horsewoman, but an excellent shot. Her maternal instincts were highly developed and she was anxious to have children. Her sexual desires were easily aroused and in close relationship with the male organ would have a normal orgasm, although connection was not made in the normal manner. It was from a desire to have children that they wished this function improved upon. The patient never knew that she ought to menstruate until told so by her married friends.

Physical Examination—The breasts were large and sensitive. The external genitalia were fully larger than normal and the parts were normally sensitive. There was no trace of a vaginal outlet.

On August 6th, 1909, she was taken to the operating room and the abdomen opened through the rectus muscle. The appendix was removed and examination disclosed complete absence of the uterus and vagina. The ovaries and tubes were, however, fairly well developed. The inner ends of the tubes converged to a point close to the base of the bladder to a nodule which represented the uterus.

In this case the abdomen was left open until the formation of the vagina was completed. Thus it was easy to follow the peritoneum as it was dissected from the rectum and bladder. Suture of the flaps was accurately determined with the abdomen open, and it was a great comfort to know that the plug did not press too tightly upon the bladder, rectum or peritoneum. The abdomen was closed and the plug inserted and dressed in position.

All went well until the twelfth day when the plug came out of the vagina. I was out of the city and the interne, with better intentions than skill, made a new plug, larger and thicker than the first one, and forced it into the canal. Such pain was caused as to require morphia. He kept the plug in place for forty-eight hours. I examined her at the end of this time and found her suffering a good deal. To my horror I discovered fecal matter in the



NO. IV.

Diagramatic Saggital Section, Showing the New Vagina. *a.* Mucus Membrane. *b.* Peritoneum. *c.* Bladder. *d.* Rectum. *e.* Symphisis.

vagina. I directed a normal saline douche, large doses of ol. ricini, in order to clear out the intestines of everything. The rectum was irrigated with boric acid solution. This required twenty-four hours' time.

The patient was then fed on albumen water and given laudanum (Min. XX., every hour) until the pupils were contracted and then she was kept chronically drowsy for a week. A shorter and smaller plug was used. This simple treatment sufficed to close the fistula. It must be stated that the fistula occurred at the apex of the new vagina.

The patient left the hopistal in twenty-one days and since that time I have not examined her, nor will she allow her physician to do so. She reports that she is perfectly satisfied with the result of the operation and has connection in the normal way. In a letter, dated November 1, 1909, she says: "I am physically normal and the marital relation is completely and satisfactorily changed."

Case 3—Sister to Case No. 1.

Operated October 2, 1909. Discharged from the hospital October 25, 1909. The patient is a slender girl, weighing 112 pounds, height five feet two inches. She is an accomplished dancer and singer and is a great favorite with both sexes. She needs very little sleep. Like her sister, insomnia is slightly in evidence. She has never menstruated, but has a slight monthly molimia, slight in disposition and lasting only for a day. One year before the operation she had the first attack of appendicitis, later had three attacks of less severity. In September the girl returned from Paris for the express purpose of having the appendix removed and the plastic vagina formed.

Physical Examination. For her size the breasts are normal, but the genitalia are small.

On October 2, 1909, the appendix was removed and the diagnosis of absence of the vagina and uterus made certain by inspection. However, there were two small ovaries and tubes, but no sign of a uterus.

The operation and after treatment was the same as recommended in this paper. Complete epitheliazation was secured and a vagina capacious enough for a girl of her size was made.

On examination, December 11, 1909, I found the vagina deviated slightly to the right, somewhat hour glass in shape, but admitting two fingers into the lower two-thirds, and only the index finger into the upper portion.

The clitoris and labia majorae are disagreeably sensitive. This is contrary to the condition which existed before the operation. The abnormality will likely subside, though hastened by treatment, spontaneously.

The young lady was married in September, 1910, and was examined in a week afterward.

Should any further operative procedure be necessary in this case I propose simply to enlarge and elongate the present vagina and skin graft to the upper raw surface to the extent desired. This can be readily done by stitching the skin graft with .00 plain catgut onto the plug that is used and then inserting it with the graft on in such a manner that the raw surface of the grafts will come in contact with the raw surface of the tunnel. In fact, I can see no reason why this procedure should not be tried first.

LITERATURE.

While a few futile attempts at the formation of a vagina in complete congenital absence of the vagina have been made, numerous operations have been devised and carried out with more or less success for atresia of the vagina.

Bland (Keen's Surgery, Vol. V.) describes a plastic operation utilizing one or both labiae to form the lining of a new canal. Carl Beck has constructed a vagina by making an incision over the pubis and dissecting the peritoneum from the bladder down to the retrovesical space. A counter opening is made in the space between the urethra and rectum to meet the first. Two skin flaps from the inner side of the thigh, having as a base the labia, are dissected up and carried into the canal and

sutured. The abdominal opening is closed and the vagina is packed with iodoform gauze.

For atresia of the vagina, Crede, in 1883, was the first to use the skin over one of the labia majora, similar procedures were devised from the mucous surface by Mackenrodt, Abbe, Noble, Baldwin and others. Baldwin resected the intestine (sigmoid) and brought the isolated loop down between the bladder and rectum for a vagina. Bovee did a similar operation, utilizing the rectum for a vagina, and stitched the sigmoid flexure to the anus to take the place of the rectum, but he does not recommend it. (The Practice of Gynecology, Bovee.)

A silver plug was used by Sims to keep the passage open and Pozzi obtained temporary success by electrolysis. "If there is absence of the vagina, or non-development of the uterus so that mensturation does not occur, it is usually undesirable to make a vagina simply to permit copulation. (Hirst, Diseases of Women, 1903.) Gillian mentions a case of atresia of the vagina successfully treated by operation. Kelly says, "An operation attempting to establish a connection between rudimentary organs and the vulva cannot be serviceable, and is therefore unjustifiable. It is also useless to attempt to form a deep pocket between the rectum and the bladder simply for sexual purposes; such an opening cannot be maintained."

J. F. Baldwin, Columbus, O., *J. A. M. A.*, April 23, 1909. Reports a case of congenital absence of the vagina in a girl of 18, in which he employed his method of restoration of the passage by the transplantation of a portion of the ileum, carefully preserving the mesentery. Recovery was uneventful and the result successful. He has operated on four such cases. Drs. Mueller and Mori each reported one similar successful case.

BALDWIN'S OPERATION.

The patient was placed in the lithotomy position and a transverse incision made in the perineum at a point corresponding to the normal opening in the vagina. Index finger in the rectum and sound in the bladder he carried the dissection forward until the peritoneum was reached. The opening was made amply large, and tightly packed with gauze pressed in around a large hemostat, which was introduced to facilitate the second step in the operation. The patient was then placed in a horizontal position, and the abdomen opened on the median line. Not a trace of a uterus could be found. (In two other cases of congenital absence of a vagina, he found the uterus represented by a small piece of tissue, about the size of the end of the little finger, on each side, close to the ovaries.) In this case the ovaries were normal, but much higher up than usual. The field of operation was protected with gauze sponges. The lower end of the ileum was brought up, the intestinal contents displaced about 12 inches, and this portion of the bowel resected, with a careful preservation of the mesentery. The ends of the resected section of the bowel were inverted with purse string suture, and the other ends connected with a Murphy button so as to re-establish the continuity of the canal. He left just enough of the lower end of the ileum attached to the colon to enable him to make this anastomosis. The peritoneum over the vagina was then opened, exposing the hemostat, which was then pushed into the pelvis by an assistant. The detached bowel was then caught at its middle by the hemostat and drawn close into the artificial vagina. The peritoneum was carefully brought together over and around the ends of the piece of bowel, making a smooth floor. The abdomen was then closed in layers in the usual way.

The patient again placed in the lithotomy position, the bowel was opened where it had been caught by the hemostat, each leg of the loop wiped out, and then packed with iodoform gauze tightly enough to pack closely against the walls of the artificial opening. The edges of the opening into the bowel were caught to the edge of the new vulva, and a

small drainage inserted at the bottom to take care of any oozing which might occur.

Baldwin examined the ileum and sigmoid in several hundred patients when making ordinary abdominal operations and found in all that there would be no difficulty in drawing down such a loop of ileum into the vagina, or a loop of sigmoid, if the ileum should not be found satisfactory. With either there would be sufficient slack of the mesentery not to interfere with the circulation. He prefers to use a loop of ileum, considering it safer than resection of the sigmoid.

In all his cases the operative recovery was absolutely smooth. He was induced to use the bowels for this purpose after extensive study of the literature of artificial vagina, which he considers shows that in entire absence all other methods resulted in "almost complete failure," although full of promise when the patient left the operating table. "By the use of the bowel a normal mucous membrane is provided, surrounded by normal connective and muscular tissue, and with ample blood supply."

In addition to Baldwin's four successful cases we have a successful operation reported by Mueller (abstr. J. A. M. A. Jan. 29, 1910) and one by Mori (abstr. J. A. M. A. Feb. 12, 1910.)

Baldwin claims that his operation preceded that of Mueller and Mori by several years.

In the issue of the *Munchener Medizinsche Wochenshrift,* of the date of December 21, 1909, Dr. Mueller describes the following case:

Operated by Prince Ludwig Ferdinand of Bavaria. The patient was a young woman about to be married. She had no trace of a vagina, nor had she ever had any sign of menstruation. Otherwise she was healthy. The surgeon decided to make an artificial vagina and proceeded as follows:

A loop of the small intestine that could be brought down to the vulva was resected for about six inches; the cut out piece was wrapped in gauze and the stumps united with an end to end suture. The resected piece with its attached mesentery was then brought down through the peritoneum between the rectum and the bladder, the lower end of the strip covered with gauze, the upper end closed with three tier suture. The lower end of the intestine was fastened to the lips of the wound in the vulva by means of five catgut sutures. The operation was a difficult one, requiring two hours and twenty miutes and was done under scopolamine, morphine, chloroform and ether.

The weakness of the pulse required the infusion of saline solution. The operation was a perfect success, the patient's recovery was uninterrupted and she now has a serviceable vagina.

Samuel Gache (Annals of Surgery, 1891, P. 223). The patient was a young girl of 16 who had never menstruated. Examination found no trace of a vagina—uterus rudimentary and about the size of a hazel nut. The tubes and ovaries were of normal size.

Operation: A tranverse incision was made into the membrane, occluding the space between the labia and rectum, and bladder separated by finger in the rectum and silver sound in the bladder. After penetrating to a depth of seven centimeters the newly made vagina was lined by cutaneous flaps from the perineum and one formed by mucous membrane from the labia minora and base of the labia majora; fixed by sutures and the vagina packed with iodoform gauze; while the bowels were constipated by opium for a few days.

The flaps healed by first intention and in six days union was complete. The new vagina measured seven centimeters and was well lined its entire extent. To prevent contraction it was packed twice daily with iodoform gauze and two weeks after the operation digital dilatation was done every three days. One month after operation the patient left the hospital in good health with a vagina that measured seven centimeters in length, permitting the introduction of the entire index finger.

McMordie (Annals of Surgery, 1889, P. 149) records a case of a woman, aged 25, unmarried, who first menstruated at 16, but not more than seven times in all. The vagina was found to be very small and the hymen intact. The finger of one hand in the vagina found hardened faeces at upper part, close to the cervix uteri A finger of the other hand in the rectum passed through an opening into the vaginal septum and met the other finger in the vagina. The opening was about the size of a sixpence or a dime, and was about an inch from the anus. The edges were freely pared towards the vagina and were brought together with silver wire. The patient was discharged in three weeks and union was perfect.

4619 *Grand Building, Chicago.*

LITERATURE.

Crede.
Abbe.
Noble.
Bovee.
Hirst.
Gillian.
Kelly.
Mackenrodt.
Gache.
McMordie.

BIBLIOGRAPHY.

Amussat: Absence complete du Vagin; operation; succes. Journ. hebd. d. Med., Vol. 1, p. 237 (1834).

Anderson, W.: Case of Complete Absence of the Vagina. Pacific Med. Journ., Vol. 46, p. 65 (1903).

Azema, H.: Absence complete du Vagin. Ann. d. Gynec. et d'Obstet., ol. 39, p. 214 (1893).

Baldwin, J. F.: Artificial Vagina by Intestinal Transplantation. Journ. Amer. Med. Assoc., Vol. 54, p. 1362 (1910).

Baldwin, J. F.: Formation of an Artificial Vagina by Intestinal Transplantation. Ann. of Surg., Vol. 40, p. 398 (1904); later article in Amer. Journ. Obstet., Vol. 56, p. 636 (1907).

Beck, C.: New Method of Colpoplasty in a Case of entire absence of the Vagina. Annals of Surgery, Oct., 1900.

Berger, L.: Ein Fall von angeborenem vollkommenen Mangere der Scheide. Wien. med. Presse, Vol. 18, p. 518 (1877).

Bernard, G.: Absence de vagin et d'uterus chez une femme mariee. Journ. d. Med. d Paris, 2d ser., Vol. II., p. 84 (1900); also in Bull. d. Soc. Med. d'arrond., Vol. III., p. 241 (1900).

Berrut: Malformation de l'appareil feminin de la generation femme close; creation d'un vagin. Assoc. franc. d. Chir. Proc. verb., Vol. II., p. 297 (1897).

Berthold, M.: Vollstandiges Fehlen der Vagina. Ber. u. d. Ereign. in d. konig. gynak Univ. Klin. zu Konigsberg., 1897, Vol. LIV.

Bland, P. B.: Surgery of the Female Genito-Urinary Organs. Malformations. In Keen's Surgery, 1909, Vol. V., pp. 351-387.

Boguel: Absence de Vagin et d' Uterus. Arch. med. d'Angers, Vol. XIII., p. 195 (1909).

Bowers, L. G.: Absence of Vagina; Embryology, Pathogenesis and Treatment. Ohio State Med. Journ., January, 1910.

Brothers, A.: Absence of a Vagina. Amer. Journ. Obstet., Vol. 57, p. 487 (1908).

Brothers, A.: Construction of a New Vagina. Amer. Journ. Obstet., Vol. LIV., pp. 289, 533 (1906).

Buckens: Absence presque complete et development rudimentaire du vagin avec hemotometre. Journ. d'Accouch., ol. XV., p. 205 (1894).

Burford, G. and Cox, W. S.: Case of Congenital Absence of the Vagina. Journ. Surg., Gynec. and Obstet., Vol. XXX., p. 321 (1908).

Carter, C. H.: Absence of the Vagina; Uterus distended by retained menstrual fluid. Obstet. Journ. Great Brit., Vol. VIII., p. 736 (1888).

Coates, C.: Arrest of Development in which there was Absence of the Vagina. Lancet, Vol. II for 1858, p. 6.

Collins: A case of Absence of the Vagina. Boston Med. and Surg. Journ., Vol. LXXIII., p. 201 (1866).

Cullen, T. S.: Total Absence of the Vagina and of Uterus. Amer. Journ. Obstet., Vol. LXXII., p. 296 (1910).

Currier, A. F.: Congenital Absence of the Vagina. New York Journ. Gynaec. and Obstet., Vol. III., p. 1086 (1893).

Curtis: Absence of Vagina; Operation, Death. Boston Med. and Surg. Journ., Vol. LXXXVI., p. 103 (1872).

Da Costa, J. C.: Absence of the Vagina with Hematometra from retained menses. Med. News, Vol. LXV., p. 269 (1894).

De Bal, J.: Cas d'Absence du Vagin. Ann. Soc. d. med. d. Gand., Vol. XV., p. 269 (1845).

Debrou: Obliteration complete et comgenitale du vagin. Gaz. med. d. Paris, 3d ser., Vol. VI., pp. 32, 47 (1851).

Desormeaux: Absence du Vagin. Bull. Soc. d. Chir. d Paris, Vol. VII., p. 421 (1856-57).

Despres: Absence de Vagin. Bull. Soc. Anat. d. Paris, Vol. XLV., p. 380 (1870).

Dixon, A.: Case of Absence of the Vagina; Operation. Med. News, Vol. LIII., p. 200 (1888).

Dolbeau: Absence congenitale du Vagin; Creation d'un Vagin artificiel; Guerison. Gaz. d. Hop., Vol. XXXIX., p. 333 (1866).

Dumitrescu, M.: Contribution a l'Etude des absences congenitales du Vagin considerees au point de vue chirurgical., Paris, 1896.

Dumitrescu, M.: Traitment des abscences congenitales du vagin. Ann. d. Gynec. et d'Obstet., Vol. XLVI., pp. 85, 422 (1896).

Emmett, T. A.: Congenital Absence of Vagina. Med. and Sug. Reporter, Vol. XXXVIII., p. 329 (1878).

Fedorow, J. J.: Eine neue Operationsart der kunstlichen Vagina. Zentralbl. f. Gynak., Vol. XXX., p. 575 (1906).

Flamarion, A.: Absence congenitale du Vagin, avec imperforation du Col de l'Uterus. Gaz. d. Gynec., Vol. I., p. 285 (1885-86).

Fleming, C. K.: Absence of the Vagina. Denver Med. Times, Vol. XXIII., p. 432 (1904).

Fulton, J. S.: Congenital Absence of the Vagina. Amer. Journ. Obstet., ol. XXVI., p. 331 (1892).

Garde, H. C.: Case of Complete Absence of Vagina. Australas. Med. Gaz., Vol. IX., p. 307 (1889-90).

Gersuny, R.: Plastischer Ersatz bei angeborenem Defekte der Vagina. Wien. med. Wochenschr., Vol. LIV., p. 485 (1904).

Gooding, J. C.: Absence of Vagina in a married woman. Lancet, Vol. I. for 1879, p. 430.

Gosselin: Absence du Vagin. Gaz. d. Hop., Vol. XL., p. 225 (1867).

Goy, E.: eD l'absence congenitale du vagin. Paris, 1880.

Gratigny, L.: Case of entire Absence of the Vagina. Cincin. Lancet and Obs., new ser., Vol. IV., p. 432 (1861).

Guillet: Absence complete de Vagin; creation dun vagin artificiel. Bull. et Mem. Soc. d. Chir. d. Paris, Vol. XXVIII., p. 782 (1902).

Haberlin: Operation bei volligen Mangel der Scheide. Zentralbl. f. Gynak., Vol. XXIX., p. 263 (1907).

Hall, C. H.: Case of entire Absence of Vagina. Oregon Med. Soc. Proceed., 1887, p. 127.

Hamilton, A. F.: Case of Congenital Absence of Uterus and Vagina. Indian Med. Gaz., Vol. XLV., p. 57 (1910).

Heilbrun: Ein Fall von vollstandigem Fehlen der Vagina. Centralbl. f. Gynak., Vol. II., p. 760 (1887).

Isaacs, C. E.: Congenital Absence of Vagina; Operation. Med. Rec., Vol. LXVI., p. 818 (1904).

Jacquemard: Un cas d'Absence du Vagin. Loire med., Vol. IX., p. 229 (1890).

Lenger: Absence totale du Vagin; creation d'un vagin artificiel. Ann. Soc. belge. d. Chir., Vol. III., p. 396 (1895-96).

Linn, A. M.: Congenital Absence of the Vagina, and a rudimentary condition of the Uterus and Ovaries. Indian Homeop. Rev. (Calcutta), Vol. XV., p. 249 1903).

McMurray, J. S. and McMurray, A. S.: Case of congenital Absence of Vagina with retention of menstrual Fluid. Amer. Journ. Obstet., Vol. XXI., p. 239 (1888).

Martin, J. N.: Absence of Vagina. Amer. Gynec. Journ., Vol. II., p. 287 (1892).

Marvel, E.: Absent Vagina with Atresia Uteri. Ann. Gynec. and Pediat., Vol. XVI., pp. 627, 632 (1903).

Molliere, D.: Absence congenitale de Vagin; creation d'un vagin artificiel. Lyon med., Vol. XXXII., p. 450 (1879).

Mori, M.: Scheidenbildung unter Benutzung einer verlagertin Dunndeermschlinge. Zentralbl. f. Gynak., January 1, 1910.

Muller, A.: Scheidenbildung aus einer verlagerten Dunndarmschlinge. Munch. med. Wochenschr., Dec. 21, 1909.

Neussel: Totaler Mangel der Vagina. Allg. med. Centr. Ztg., Vol. XXVI., p. 49 (1887).

Oui: Absence congenitale du Vagin. Compt. rend. Soc. d. Obstet. d. Gynec. et. d. Pediat. d. Paris, Vol. V., p. 10 (1903).

———

Ozenne, E.: Absence congenitale du Vagin. Journ. d. Med. d. Paris, 2d ser., Vol. XIV., p. 472 (1902).

Pallen, M. A.: Absence of the Vagina. St. Louis and Surg. Journ., new ser., ol. VII., p. 45 (1870).

Paucot, H. R.: De l'absence totale congenitale du vagin et de son traitement operatoire. Lille, 1903.

Patry: Absence complete du Vagin avec presence de la Matrice accomplissant des fonctions. Gaz. d. Hop., Vol. XXXIV., p. 69 (1861).

Petit: Absence complete du Vagin. Journ. hebd. d. Progr. d. Sc. et Inst. med., Vol. I., p. 237 (1834).

Petit-Lardier, G.: Contribution a l'Etude des Malformations congenitales du vagin. Paris Thesis, 1907.

Picque: Absence complete du Vagin; creation d'un vagin artificel. Bull. et Mem. Soc. d. Chir. d. Paris, new ser., Vol. XXI., p. 639 (1895); also in Semaine med., Vol. XV., p. 474 (1895).

Picque: Absence du Vagin. Bull. et Mem. Soc. d. Chir. d. Paris, new ser., Vol. XXX., p. 284 (1904).

Polaillon: Absence complete du Vagin. Gaz. med. d. Paris, 7th ser., Vol. IV., p. 169 (1887).

Pozzi, S.: Absence congenitale du Vagin et probablement de l'Uterus et des Annexes. Bull. et mem. Soc. d. Chir. d. Paris, new ser., Vol. XXXV., p. 202 (1909).

Robinson, E. M.: Absence of Vagina; Absence of Uterus; Ovaries and Tubes Normal. Alabama Med. Journ., Vol. XVIII., p. 543 (1905-6).

Rokitansky, K. Von: Mangel der Vagina. Wien. med. Presse., Vol. XVIII., pp. 306, 751 (1877).

Routh, C. H. F.: Case of Absence of Vagina with retained menses. Obstet. Soc. of London Transact., Vol. XII., p. 34 (1871).

Schwartz, E.: Sur un cas d'absence congenitale des deux tiers inferieurs du vagin; creation d'un vagin complet. Rev. d. Gynec. et d. Chir., abd., Vol. I., p. 961 (1897).

Smith, A. L.: Case of Congenital Absence of Vagina and Uterus. Ann. Gynec. and Pediat., Vol. XVIII., p. 169 (1905).

Vautrin: Considerations sur l'absence totale du Vagin et son traitement chirurgical. Ann. d. Gynec. et Obstet., 2d ser., Vol. II., p. 66 (1905).

Villar: Absence du Vagin. Gaz. d. Gynec., Vol. X., p. 363 (1895).

Vitrac: Hemotometre avec absence de vagin. Rev. med. chir. d. Med. d. Femmes, Vol. XVIII., p. 485 (1896).

Walton, P.: Absence de Vagin. Belgique med., Vol. II., p. 353 (1898).

Warren, J. C.: Non-existence of Vagina; Operation. Amer. Journ. Med. Sci., Vol. XIII., p. 79 (1833).

Wathen, W. H.: Congenital Absence of Vagina. Kentucky Med. Journ., Vol. VIII., p. 1304 (1909-10).

Worthington, C. N.: Absence of Vagina. New Orl. Med. and Surg. Journ., Vol., IV., p. 169 (1876).

ACUTE MULTIPLE UROGENOUS ABSCESS OF THE KIDNEY RESEMBLING ACUTE UNILATERAL HEMATOGENOUS NEPHRITIS*

By GEORGE TULLY VAUGHAN, M.D.,
Washington, D. C.

G. C.; white male; aged 29; nativity Greece; occupation waiter; admitted to Emergency Hospital, May 7, 1910; referred to me by Dr. Constas. Patient's family history was unimportant except that it showed no history of tuberculosis, his parents and all his brothers and sisters still living and in good health. Patient claims to have had no disease until he contracted gonorrhea at the age of 23 and failed to make a complete recovery; at the age of 25 he had another outbreak of the same disease, which lasted three or four months, and at the age of 27 he had his third attack, which lasted over a year, but from which he thinks he made a good recovery.

His next trouble began suddenly in the night of January 17, 1910, with some pain in the left lumbar region which extended down into the iliac and inguinal regions, followed by vomiting. He was admitted to hospital where a diagnosis of probable stone in the kidney or ureter was made, but the Roentgen-ray failed to confirm the diagnosis. The pain and vomiting continued for several days then gradually subsided and after three weeks he left the hospital seemingly well and had no further trouble until May 7, 1910, when at 2 o'clock in the morning he was again attacked with pain and vomiting as in the attack of nearly four months before and was admitted to hospital at 4 a. m., May 7. At the time of admission his pulse was 84 and temperature 98.6°. Next morning pulse was 108, temperature 102°, and at 7 p. m. on the same day the pulse was 136 and temperature 104.8°.

May 9, had two chills. Pulse 126, temperature 104.4°, tongue and lips dry and he was evidently a very sick man. Urinalysis showed numerous bacilli, some leucocytes and epithelial cells, no albumin or blood. Blood examination showed leucocytes to be 12800. Pain was not great and was in the left hypochondriac region which was slightly tender in front and behind over the kidney. Diagnosis was made of a severe acute infection of the kidneys or spleen, probably multiple abscesses of the kidney and immediate operation advised. Under morphine-atropine ether the left kidney was exposed by an oblique incision just below the last rib which was removed for the purpose of giving more room. The perinephric fat was found thickened and adherent to the kidney which was much enlarged and removed with some difficulty by clamping the vessels at the hilum with forceps, cutting the kidney away and then ligating the pedicle in two sections with chromic gut. The patient's condition was bad, pulse 170 and the operation was hurriedly completed, leaving four pairs of hemostats which controlled vessels projecting from the wound.

The temperature and pulse fell gradually after the operation for thirty hours, when the temperature was 98.4° and pulse 100. The temperature rose to 101.8° on the 11th and then subsided to normal and the patient had an uninterrupted convalescence.

The kidney was enlarged to two or three times its normal size, weighing 335 grams (about 12 oz.) and was thickly studded with yellowish-white nodules on the surface and in the parenchyma—some of the nodules being grouped together in patches, others scattered generally and varying in size from that of a pin-head to a pea. It looked almost exactly like cases of tuberculous kidneys which I have removed. In the pelvis of the kidney which did not seem to be affected was a round calculus about the size of a .32 ball. Dr. J. J.

*Read before the Southern Surgical and Gynecological Association at Nashville, Tenn., Dec. 13-14-15, 1910.

Kinyoun kindly examined the specimen for me and the following is his report:

"The capsule is thickened and oedematous. Between the capsule and cortex, there are numerous small haemorrhages, some contain a considerable number of pus cells, and mononuclears.

"The glomeruli are compressed by an oedema, in some there are haemorrhages, in others, fibrin and pus cells.

"Many of the convoluted tubules, and some of the straight tubules show an acute parenchymatous degeneration, with desquamation; a number of these contain haemorrhages.

"The haemorrhages and exudate within the tubules appear to have their origin in the pelvis and in an ascending process and are not due to infective emboli.

"The convoluted tubules in a number of areas are greatly distended with pus cells, fibrin and cell detritus, so that they have almost completely lost their characterstic morphology.

"Scattered through the kidney, are abscesses of various sizes, and degrees of degeneration. These are more numerous in the cortex, but none of these resemble infarcts. The capillaries and arterioles do not appear to have been involved to any extent in the inflammatory process—some of the vessels in close proximity to the abscess or implicated therein, contain an increase in the number of leucocytes—principally pus cells.

"A careful search was also made for tubercle bacilli, but none were found. Masses of a short round-end Gram-negative bacillus were seen in many of the abscesses. These probably belonged to the Colon group.

"No bacteriological examination was possible because the specimen had been placed in a hardening solution for some time before being received for examination."

From this report it is evident that the infection extended from the pelvis of the kidney, which contained a stone, through the uriniferous tubules into the substance of the kidney.

Previous to Dr. Kinyoun's examination I had regarded the case as one of acute hematogenous nephritis, for which I had been on the lookout ever since I read Brewer's paper on the subject published four years ago in Surgery, Gynecology, and Obstetrics, and heard a second paper on the same subject by the same author two years ago at a meeting of the American Surgical Association. The later stages or results of kidney infection, such as abscess, pyelitis, pyelonephritis and pyonephrosis, have long been recognized, but the early symptoms of acute multiple abscess have often escaped recognition.

Kidney infection may be one of three kinds, namely, traumatic, urogenous, or hematogenous. Two factors are necessary in order to get a hematogenous infection; first, the presence of micro-organisms in the blood current, and, second, a peculiar condition of the tissues of some organ which invites the location of these micro-organisms. My case evidently belongs to the urogenous variety of infection, the germs coming directly from the pelvis of the kidney, although it is possible that they may have been brought to the kidney pelvis by the blood current and induced to locate there by reason of lesions produced by the calculus. The organisms which have been found are the bacillus coli communis, the staphylococcus, the streptococcus, the pneumococcus, and the tyhpoid bacillus, and these may enter the blood from the intestine, from abscesses, furuncles, carbuncles or during the course of the exanthemata. One kidney is selected rather than the other because of diminished vitality on the part of the kidney as a result of trauma, disease, or anomaly, such as calculus, stricture, or obstruction of the ureter or the existence of a floating kidney. Both kidneys are sometimes affected.

In order to demonstrate the effect of traumatism in attracting the germs in the blood to a single kidney, Brewer made experiments on sixteen rabbits and dogs by bruising a kidney and then injecting a germ culture into the

ear vein both of the principal and the control animal, and concludes as follows:

"A review of these experiments will show that none of the control animals which had received a moderate dose of pathogenic bacteria directly into the circulation without other injury, developed a surgical lesion of the kidney. Of the sixteen animals which, in addition to the inoculation, received an injury to one kidney, five showed no lesion, or only hyperemia and parenchymatous degeneration. Two of these animals died within twenty-four hours of acute septic intoxication. Of the remaining eleven, all developed distinct surgical lesions of the kidney. In eight the lesions were unilateral and limited to the injured kidney. In three the lesions were bilateral. In one of the bilateral cases the lesions were practically equal in extent and in severity. In the other two, the lesions in the uninjured kidney were mild in character, and undoubtedly would have recovered under favorable conditions. The renal lesions produced by these experiments were practically identical with those observed in our clinical cases."

The symptoms seem to be the same in acute multiple abscess of urogenous origin as in the acute hematogenous variety. There may be a history of infection, and the symptoms usually come on sharply and suddenly, with evidence of an overwhelming infection. Often there are one or more chills followed by fever, and a high temperature, 104 to 106°, pulse 120 to 140, and leucocytosis of 20,000 or thereabouts. More or less pain is present, but it varies in degree, and while the patient usually complains of pain in the region of the kidney, there may be general aches and pains all over. Tenderness is usually present over the kidney, and Brewer regards tenderness in the costovertebral arch of one side as pathognomonic. The urine usually contains albumin, pus or blood.

The diagnosis must be made from appendicitis, pancreatitis, cholecystitis, hepatitis, splenitis, and perforating ulcer of the stomach or intestine.

TREATMENT: In the fulminating cases which come on with such severe symptoms it would seem from the experience of Brewer and others that an early nephrectomy is the proper treatment.

Brewer's experience was striking and instructive. His first five cases were treated by incision of the kidney and drainage—all five died. He then treated a series of eight cases by early nephrectomy, and all recovered. It must not be understood from this experience that all cases are to be treated by nephrectomy. If the symptoms are not so acute and the toxaemia not so overwhelming, incision, stripping of the capsule, and drainage, may be sufficient; but the responsibility resting on the medical attendants in such cases is very great.

CONCLUSIONS.

1. Acute multiple abscess of the kidney can arise from urogenous infection.

2. The symptoms are the same as those seen in acute hematogenous nephritis, and the treatment is the same.

1718 *I Street.*

SUPPURATING ECHINOCOCCUS CYST OF THE LIVER—ENUCLEATION OF SAC—RECOVERY*

By JOHN CHADWICK OLIVER. M.D.,

Professor of Clinical Surgery, Ohio-Miami Medical College. The Medical Department of The University of Cincinnati.

Examples of hydatid cysts of the liver must be very rare in the vicinity of Cincinnati because so far as I can ascertain this is the first case of this nature in the living subject reported from our city. I have personal knowledge of three cysts of this character found at necropsies. Dr. H. W. Bettmann has recorded one such, the late Dr. Kebler found one, and I had the good fortune to discover a very small hydatid cyst, at a post-mortem examination several years ago. It seems rather remarkable that more of these cysts are not

*Read before the Southern Surgical and Gynecological Association, Nashville, Tenn., Dec. 13-14-15, 1910.

found, because Cincinnati has a large number of foreigners, from countries where this disease is more common, added to her population each year. Many of these become patients in the city hospital so that our opportunities for encountering this disease are fairly good, but the fact remains that but very few examples have been found either in the wards or in the necropsy room.

The patient, the subject of this report, was a Roumanian, a widow twenty-four years of age. She had no knowledge of the English language, so our communication with her was very limited. We succeeded in obtaining some of her earlier history from a friend, but we had no means of getting any information from the patient herself.

The patient had not been well for about four years. The only history we could obtain was of an illness in which cough, loss of weight, night-sweats and frequent pulmonary hemorrhages were marked symptoms, There had been an attack resembling hepatic colic about two years before her entrance to the hospital, but nothing definite could be secured which seemed to have any direct bearing upon her condition at the time of our first acquaintance.

She had been working in a tobacco factory and continued at her work daily until the evening of June 28, 1910. She felt badly all day and in the evening was feverish. She suffered with general aching and fever for two days. On June 30th pain in the right hypochondriac region developed. This pain, while continuous, showed exacerbations and remissions.

Her temperature was 102 when she was admitted to the Cincinnati Hospital on July 7, 1910. It was deemed possible that her septic condition might have been due to some pelvic difficulty, but a thorough examination of the generative organs dispelled that suspicion.

The medical examination revealed a subicteric hue of the conjunctiva, evidence of an old tuberculous process at each pulmonary apex, a normal heart, and a trace of bile pigment in the urine. The abdomen was asymmetrical because of a fullness in the right upper quadrant. The abdominal walls were flaccid, but the patient complained of exquisite tenderness over the bulging area, A mass, extending from the right costal margin downward to the umbilical line and inward to the median line, was readily palpable. The enlargement was smooth, regular and everywhere firm except at one point about midway between the costal margin and the line of the navel where fluctuation was apparent. Palpation of the mass caused much pain, but no thrill was present.

The abdomen was soft and flaccid during the early part of the woman's residence in the hospital, but by July 13th—six days after her admission—abdominal rigidity was a marked feature. The entire abdominal wall became tense. The intra-abdominal enlargement increased and with it came added pain and tenderness. The temperature was clearly septic in character and the patient lost weight and strength.

She was transferred to the surgical service July 19, 1910. By that time the enlargement had extended to the crest of the ilium and had passed to the left of the median line. Blood examinations were negative. The leucocytes numbered 7,200 and 7,600 on two occasions,

The history and symptoms pointed clearly to an abscess of the liver and that was the diagnosis made in the medical service and fully accepted in the surgical department.

Dr. Frank E. Fee, my junior surgeon, opened the abdomen by an incision through the right rectus muscle on July 21st. The liver was not adherent to the anterior abdominal wall, but was enormously enlarged. A yellow point indicated the near approach of the cyst to the surface of the liver, and at this point fluctuation was apparent. A ring of iodoform gauze was introduced and the patient was returned to her bed for twenty-four hours.

An aspirator needle was thrust into the fluctuating spot the next day and a clear fluid was withdrawn. A second puncture through

the substance of the liver yielded a similar result. Some of this fluid was sent to the laboratory and an immediate report said that many hooklets were found. Forty ounces of clear fluid were withdrawn,

The thermo-cautery was used to cut through the inch of liver tissue that covered the cyst, The cyst wall was enucleated by blunt dissection and traction after the contents of the sac had been evacuated by aspiration. During the enucleation of the sac a purulent collection was encountered *outside* of the cyst wall—an apparent effort of nature to cast off the offending cyst. The sac was extremely thin at points, but it was removed *in toto*.

The after-history was uneventful. The drainage, which consisted of pus and bile, gradually decreased and the patient was discharged well, August 30, 1910, six weeks after the operation.

REMOVAL OF A TUMOR OF UNCERTAIN CHARACTER FROM THE LIVER—RECOVERY.

It might not be amiss to report the following case record in connection wth the foregoing.

Mr. P. Y., aged 31, is a farmer by occupation, but was for several years a member of the United States army, For two years prior to the time he came under my observation he had suffered with a fixed pain under the middle of the right rectus muscle about one and one-half inches below the right costal arch. The pain was distinctly nearer the median line than the gall-bladder. The pain on rare occasions was also felt under the right scapula and in the right shoulder. "Hunger-pains," *relieved but for a short time by eating,* were complained of. There was no increase of pain at the time food should have been passing from the stomach into the duodenum. He had never vomited.

The patient passed some scyballae and mucus from the bowels and on two occasions the mucus was blood streaked. An examination of the feces by Dr. F. B. Samson failed to reveal anything of importance,

Several examinations of the gastric contents proved the gastric secretion to be normal.

The patient was kept under observation for six months and treated for duodenal ulcer by Dr. C. A. Eckler, of Dry Ridge, Ky. This was done at my suggestion because I thought that duodenal ulcer was the most likely diagnosis.

The pateint was not benefited by the treatment, so on January 3, 1910, the abdomen was opened. A careful examination of the stomach and gall-bladder failed to show any pathological condition, but a hard, yellowish-white tumor about the size of a large hickory nut was discovered at the left margin of the right lobe of the liver. The tumor projected from the free margin of the liver, but the greater part seemed imbedded in liver tissue.

The mass with the surrounding liver tissue was excised. The liver substance around the tumor was sclerosed and its removal was accompanied with a minimum amount of hemorrhage, A gauze drain was inserted down to the site of operation.

The patient recovered from the operation and has been free from his old symptoms ever since. He has gained in weight and strength and seems perfectly well.

The tumor was almost entirely devoid of blood-vessels, was yellowish-white in color, of a consistency similar to that of the meat of a walnut, and looked on section like swiss cheese.

Microscopic examination (by Dr. F. B. Samson).

Specimen submitted January 3, 1910, by Dr, J. C. Oliver for section and microscopic examination.

This specimen was a nearly spherical tumor, one inch in diameter. It had no pedicle. Its surface was of a rather dense, fibrous tissue, whitish, and by its roughness, showed that it had been dissected or torn away.

Upon opening the tumor it was found to consist of a fibrous sac filled with a cheesy mass—somewhat jelly-like—light buff with a pinkish tinge—of a uniform consistency and

appearance. The central mass entirely filled the sac and bulged slightly on the cut surface.

The section of the sac was white in color and from one-eighth to one-sixteenth of an inch in thickness.

The indistinct line of demarcation between the sac and its contents contained a number of small areas of calcareous deposit. One of these areas extended from the sac one-sixth of an inch into the central mass.

A number of sections were cut and stained by the hematoxylin-eosin method.

Under the microscope the central mass was seen to be necrotic material staining only faintly with the eosin and not at all with the hematoxylin,

It consisted of a rather close and indistinct network of fibrillae. In many places there were round openings from which cells had probably fallen.

No distinct cells or nuclei were found.

A few bunches of crystals, possibly soap crystals, taking a blue stain, appeared here and there.

There was no round cell infiltration nor sign of organization except near the capsule.

The capsule consisted of white fibrous tissue with few nuclei and few blood vessels.

At places red blood corpuscles appeared in masses between the fibres.

There was no distinctly laminated appearance as occurs in an echinococous cyst.

The line between the capsule and its contents was generally well marked, Along this line and on each side of it in the capsule and in the central mass were a number of areas of round cell infiltration of a lymphocytic, not of a polymorphonuclear type.

Here and there new formed connective tissue had apparently pushed out a little way from the capsule into the central mass.

A number of small deposits of calcareous material also appeared on both sides of this line.

Neither hooklets, giant cells, nor tubercles were found in the tumor and a search made for tubercle bacilli yielded negative results.

The round spaces, already mentioned, in the central mass were so placed as to suggest hepatic lobules with their central vessels, but, on further examination, this idea was discarded as improbable. No other trace of liver tissue could be found and no trace of lymphatic tissue.

The capsule was not of the glistening appearance usual in an echinococcus cyst, neither was it folded or wrinkled as one would expect in a cyst which had been larger and had shrunken when its contents had lost their fluid leaving only the solids.

Considering the small number of postive findings and the large number of negative findings in this case, I am obliged to say that I can make no positive diagnosis and can only guess that we may have here an old encapsulated tuberculous area or possibly a degenerated, consolidated echinococcus cyst."

One sister of the patient died from tuberculosis, but the patient himself failed to give a positive reaction to the Pirquet test.

DIAGNOSIS OF ECTOPIC GESTATION—WHEN AND WHEN NOT TO OPERATE*

By E. GUSTAV ZINKE, M.D.,
Cincinnati, O.

There is but one reason for the production of this paper. It is presented for the sole purpose of eliciting a thorough discussion of its subject. The views therein expressed are supported by a record of sixty-three cases observed by the writer.

Although the pathology of ectopic gestation has been thoroughly and carefully studied—the diagnosis is, as a rule, difficult and sometimes impossible because of the multiplicity of the pathologic changes produced. The greatest difference exists between a *tubal abortion* and an extra-uterine pregnancy at or near term; or between a *tubal rupture* and a suppurating ectopic gestation-sac containing a broken-down lithopedion or macerated foetus. They have only one feature in common: They are all classed as extra-uterine foetation.

An imperfect knowledge of the various and numerous changes that may occur in the different varieties of ectopic gestation is, undoubtedly, responsible for the divers opinions as to which may be the wisest plan of treatment in each case. The questions to be decided are: Is it best to operate in every case without delay? Can the operation be deferred until the patient's condition has improved? Is it advisable to transfer the patient to a more favorable environment? Is it possible for the patient to recover without an operation?

There are many surgeons, perhaps they are the great majority, who advise surgical intervention, in every case of extra-uterine pregnancy as soon as possible after the diagnosis has been made.

There is a considerable minority, however, which maintains that great haste is rarely, very rarely, an absolute necessity, in cases of ectopic gestation; that in most instances we have time to prepare the patient and ourselves for the operation; that many times the patient may be safely removed to a hospital; and that some of these unfortunate victims may recover perfectly without an operation. The operator thoroughly familiar with the pathology of the various forms of extra-uterine pregnancy and the clinical phases produced by them, will rarely be misled in his judgment as to the time and mode of operative intervention.

It is, therefore, not alone the *diagnosis* of ectopic gestation which determines the mode of treatment; we must, to a certain extent at least, know the pathologic changes that have occurred in each case. We must be able to ascertain, as nearly as possible, the duration of pregnancy, the locality of the misplaced ovum, and the changes produced in the maternal structures involved.

A *tubal abortion* may take place and be followed by recovery without the least suspicion of the existence of an ectopic gestation. A physician may not even have been consulted in the case.

Almost invariably, tubal abortion occurs within the first two months of gestation. The *tubal pains* are, more or less, distinct and never very severe. But when blood and ovum come in contact with the peritoneum the pain is acute and the shock more or less marked. Symptoms of profound internal hemorrhage are absent. An examination usually reveals a small doughy tumor to one side of or behind the uterus. The pains recur at varying intervals, become gradually less pronounced, and finally cease altogether. The swelling in the pelvis, at the same time, becomes harder and smaller and eventually disappears altogether. The blighted ovum and blood discharged from the tube are slowly absorbed and no trace of them is left behind. There may or may not

*Read before the Southern Surgical and Gynecological Association at Nashville, Tenn., Dec. 13-14-15, 1910.

be a history of suspended regular, or irregular, menstruation. But the formation in the pelvis, of a tumor associated with *tubal pains,* and a tumor which slowly disappears after the pains have ceased—may be safely regarded as a tubal abortion.

Unless the pains in a tubal abortion continue and the tumor grows steadily larger, as in the formation of a so-called *peri-tubal hematocele,* operative interference is hardly justifiable. Indeed, cases have been observed, time and again, in which even in peri-tubal hematocele complete absorption of blood and ovum took place.

The *peri-tubal hematocele,* first described by Sanger, represents an incomplete tubal abortion in which the tube has dropped into Douglas' pouch and its fimbriated extremity become strongly adherent to the floor of this cul-de-sac. But, in spite of the adhesions formed, the blood continues to exude slowly from between the bands of adhesions, collects and coagulates around the distended tube, forming a club-shaped tumor the size of a fist, immediately behind the uterus. If, after the formation of this tumor, the pains associated with it subside and entirely disappear, and the swelling daily grows harder and diminishes in size, an operation is not an absolute necessity. Nature may, and often does, effect a cure in these cases. If, however, the tumor continues to increase in size, the pain is constant and anemia develops, the necessity of an operation is indicated and should be performed as soon as the patient can have the full benefit of asepsis at home or at a hospital. In such cases there is always ample time to prepare the patient for the operation.

In case of *tubal rupture* various totally different conditions may be noted. Most of them admit of waiting. In a few cases—very few—delay of half a day, perhaps of less time, may be fatal in its consequences.

Rupture of the tube between the layers of the broad liagment is, as a rule, preceded by tubal pains which increase in severity and frequency till the tube gives way. Hemorrhage results and both blood and ovum find lodgment between the folds of the ligament. Because of the limited space bleeding is never excessive, though it may continue at intervals for some time and form a hematoma of considerable size on one side and behind the uterus.

The clinical picture of this condition is not very striking. The patient may have experienced delayed menstruation, or missed a period or two, when she is seized with periodical pains, experiences possibly a slight loss of blood from the uterus, and a sense of weight and fullness in the pelvis. A digital examination reveals a doughy swelling to one side and behind the womb, Shock and acute anemia are hardly noticeable, or may be entirely absent. Here, as in simple tubal-abortion and peritoneal hematocele, if the hemorrhage ceases and the patient is kept in bed, the pelvic hematoma becomes gradually harder and smaller and, in time, may be completely absorbed. If the bleeding continues, the pain will increase, the hematoma will grow larger and anemia will soon manifest itself. This latter condition calls for early operative interference, but admits, usually, of ample time to prepare the patient for the operation.

Rupture of the tube upon its free surface, like rupture between the ligamental folds, is preceded by tubal pains. When the rupture takes place, severe pain with more or less, but very distinct, shock always accompanies the accident. Shock and pain are due to the effect of the blood upon the peritoneum and both vary according to the amount of hemorrhage and the extent of the tear. Of course the more extensive the rent, the greater the hemorrhage and, consequently, the more intense the pain, the more profound the shock, and the more marked the anemia.

If the loss of blood is moderate, as in the presence of a small rent in the tube, which is promptly plugged by the chorionic villi and the exudation of lymph from the weeping peritoneum, hemorrhage is arrested, the patient rallies quickly and, for the moment at least,

appears to be out of danger. He who knows and does his duty will lose no time in operating as soon as he can secure for the patient that degree of safety so necessary for avoiding complications and for the recovery of the patient. Under these circumstances a day, or even more time, may be spent in preparation of the patient and her home. Especially so if it is evident that the blood in the peritoneal cavity reveals a tendency to coagulation and encapsulation. In cases of this kind the problem as to what should be done is easily solved.

This is not so, however, in those cases of tubal rupture in which the hemorrhage is profuse, the shock profound, and the anemia extreme from the start. When the physician is confronted with a case of this kind—the patient vomiting, pulseless and colorless, the picture of violent shock and extreme exhaustion —within half an hour after the rupture has occurred—two contingencies arise: Is it wise to operate at once, without regard to asepsis of the patient and her environments, the surgeon, the dressings, and his instruments, hazarding as thorough sterilization as circumstances will permit before performing the operation? If he decides upon the latter course, an hour, two hours, and even more time, may have to be spent before the patient is ready for the operation. Some one may say: "By this time the patient may be dying or dead." True, this may be so. But would the patient's life have been saved by an immediate operation? I have yet to see the first case in my own practice, or in the practice of others, where the patient did not die during or soon after the operation when the unfortunate woman was the victim of profound shock and exhaustion from excessive internal hemorrhage. In spite of hypodermoclysis and other means to support the weakened heart and enfeebled respiration, these unhappy patients succumb and, in every case which I have seen, the operation has more the appearanee of a post-mortem, than an ante-mortem procedure. Not a drop of blood issues from the abdominal wound when the incision is made. And should, peradventure, the patient recover from the operation, what of the complications that are almost certain to arise in the absence of the precautions so important in abdominal surgery?

On the other hand the writer has seen cases which were, apparently, brought to the verge of the grave from hemorrhage and shock due to a ruptured tubal-gestation sac, in which, by the time the preparations for an aseptic abdominal section were completed, the patient had rallied from the shock, the pulse reappearing and respiration again becoming full and strong. The patient was thus placed in a far more favorable condition for the operation, with a much brighter prospect for a prompt, perfect and permanent recovery.

Have not all of us seen the so-called *retro-uterine hematocele* of Nelaton? What a significant and impressive story of events it reveals in the chapter of ectopic gestation! Here we find the entire pelvic and lower abdominal cavity filled with coagulated and encapsulated blood, in the centre of which lies the blighted ovum, or the embryo, stripped of its membranes. The history of these cases invariably records a tale of days and even of weeks of suffering and confinement in bed, marked by repeated attacks of severe pain in the lower abdomen, often accompanied by vomiting and fainting spells, every renewed seizure of which means an additional tear in the ectopic ovisac to be followed by hemorrhage and shock. The tumor which is thus formed extends sometimes up to and above the level of the umbilicus. Occasionally the true nature of the case is not recognized until the abdomen is opened.

No one, who is familiar with the course and termination of a ruptured ectopic gestation cyst, would stand idly by and expose the patient, needlessly, to repeated recurrences of pain, hemorrhage and shock. But the retro-uterine hematocele proves, beyond doubt, the persistent effort which nature makes to arrest hemorrhage and that it is not wise to open the abdominal cavity in any case immediately

after the diagnosis of internal hemorrhage from an extra-uterine foetation has been made, unless the patient's physical condition and surroundings are such as to give her the best possible chance of recovery.

The writer has never seen a case in which the patient died of hemorrhage within an hour, or even ten hours, after the first rupture had occurred. He is not disposed to deny that cases of death from internal hemorrhage may occur so soon; But these cases must be extremely rare, so rare, indeed, that most of us have never seen one. In the great majority of cases the hemorrhage, which follows rupture of an ovisac, is moderate, and coagulation and encapsulation of the blood, as well as the formation of adhesions around the tear, are very prompt. Thus the hemorrhage is, temporarily at least, either entirely arrested or it continues very slowly. At any rate, not enough blood is lost to prevent the patient's rallying from the shock of the initial tear and hemorrhage.

The best evidence of nature's remarkable effort to repair is seen in those cases of ruptured tubal pregnancy in which the ovum continues to live and to develop for weeks and sometimes months. A new gestation sac is built up by degrees around the ovum by the formation of adhesions between the omentum, visceral and parietal peritoneum to such an extent that the pregnancy may continue even unto the end of term. We could not ask for a more striking and convincing illustration of what nature does for many of these cases and we should heed the lesson.

The character of a ruptured ectopic gestation-sac is, however, entirely different when coagulation and encapsulation of the blood is exceedingly slow or does not occur at all. Fortunately cases in which coagulation and encapsulation fail to take place are very rare. These are cases in which the symptoms which ing from the beginning, Unless coagulation and encapsulation of the blood succeed in due time, the hemorrhage will prove fatal in a accompany and follow rupture are very alarm- comparatively short time. But from 12 to 24 hours, usually, pass before death results from the loss of blood alone so that, even in these cases, bad as they are, there is, ordinarily, ample time for the operator to prepare his patient and himself for an aseptic abdominal section. Patients who have bled, more or less continuously, from four to twelve hours or longer, who have vomited excessively, whose features have become pale and pinched from suffering and from the loss of blood, who are without pulse, and who are in a state of utter hopelessness and despair—will not be saved from death even by a prompt and strictly aseptic abdominal section. What hope is there in the *"jack-knife and shoe-string procedure"* for the unhappy victim?

What has been said of tubal gestation with rupture of the tube into the free peritoneal cavity is, more or less, true of rupture of an interstitial ectopic pregnancy. But the symptoms are decidedly more violent from the beginning. Only an early aseptic operation can save the patient. But, even in these cases, coagulation and encapsulation of the blood frequently causes in the patient's condition a temporary improvement, which will allow sufficient time to erect all the safeguards for a successful operation.

Cases of tubal pregnancy in which the tube remains intact to the last, are very infrequent. Because of the absence of rupture and adhesions, symptoms are wanting. The existence of tubal pregnancy is not recognized until the foetus dies either prematurely or at the end of term, and labor is "missed." However, should this form of ectopic pregnancy be diagnosticated—no matter at what period of gestation—it is, invariably, a case for operation. No chance should be taken in permitting the case to go to the period of viability or to the end of pregnancy. These cases always admit of ample time for necessary operative precautions.

The same may be said of the *ovarian, tubo-ovarian, tubo-abdominal* and *secondary abdominal* varieties of extra-uterine foetation.

All are cases for operation, as soon as the diagnosis is established. But here again, though there is every reason for avoiding procrastination, there is no need for undue haste and a favorable time of the day and a convenient place for the operation may be selected.

It is not necessary to add that a safely encysted ectopic pregnancy should not be permitted to go on indefinitely, even though numerous cases are on record where a lithopedion, or lithocelphus, has been retained for years without causing serious inconvenience. In most instances suppuration sets in sooner or later, either through a direct infection or through a process of positive chemotaxis. The patient should not be exposed to the risks and annoyances attending a suppurating ectopic foetus and gestation sac.

Before closing it may be well to answer a few questions which are often asked: "How can you tell when hemorrhage from a ruptured ectopic gestation has ceased?" "How do you know when the blood, spilled into the peritoneal cavity, coagulates and encapsulation of the same is taking place?" The answers are simple: If the patient recovers from the shock and her condition improves, the hemorrhage has stopped. If, with the improvement in the patient's condition a doughy swelling can be felt to one side, behind or around the uterus, coagulation of the blood is going on and its encapsulation is the natural consequence, In the absence of renewed hemorrhage, the swelling in the pelvis slowly becomes harder and smaller because of the absorption of the watery element of the blood. If the blood does not coagulate and the bleeding continues, there is no swelling to be felt through the vagina; but, instead, the cul-de-sac is flattened and fluctuation is present. Palpation and percussion of the abdomen reveal all the symptoms of ascites. A flattened vaginal fornix, and the presence of fluctuation in connection with other physical signs of ascites, always mean that the blood in the peritoneal cavity is not undergoing coagulation, that the patient is still bleeding or is likely to bleed again at any moment.

CONCLUSION.

(1) Tubal abortion is frequently not recognized and often terminates in recovery. If diagnosticated a hurried operation is never necessary.

(2) Tubal rupture between the broad-ligament never places the patient's life in immediate jeopardy. There is plenty of time to prepare for an operation. Some cases recover without resort to the knife.

(3) Tubal rupture into the peritoneal cavity, including the interstitial variety of ectopic gestation, is always a grave accident. The symptoms are, usually, marked and characteristic. The sooner the patient is subjected to an operation, the more prompt the recovery. As a rule there is time sufficient to prepare for an aseptic operation.

(4) All cases of extra-uterine foetation which result in sub-peritoneal hematoma, or peritubal hematocele, or retro-uterine hematocele, should be brought to an early operation. Most of these cases may be safely conveyed to a hospital and carefully prepared for operation.

(5) Cases of advanced, or long retained, and well encysted, extra-uterine pregnancies are nearly always easy of diagnosis and should be operated upon as soon as the patient can be made ready for the event. These patients, too, may be with safety removed to a hospital.

(6) It must be admitted that it is possible for a patient to bleed to death from a ruptured gestation sac within an hour or two. Nor can it be denied that this occurrence is extremely rare. So rare, indeed, that most of us have never witnessed a case of this kind.

(7) If the history of every case of rapidly fatal hemorrhage, from a ruptured ectopic gestation-sac could be exactly recorded, it would be found that by far the great majority had been bleeding from twelve to twenty-four hours before an experienced operator was called.

(8) A patient who bleeds to death within an

hour or two could have been saved only by an operation performed within from fifteen to thirty minutes following the tear in the gestation-sac. And if the man with the "jack-knife and shoe-string" had been present when the accident occurred; would he not have hesitated a little before he proceeded with the operation? And whether he hesitated or not, his patient would surely be lost.

(9) Patients who have bled for many hours, who are bloodless, colorless, pulseless, and completely exhausted, are not good subjects for an operation. They die either during the operation or soon thereafter. It is true the operator has done his duty. But where is his satisfaction?

(10) It is proper, therefore, to weigh well the evidence in every instance. All depends upon the time when we first see the patient, her condition, her surroundings and our own preparedness for an immediate operation.

OMENTOPEXY*

By MAURICE H. RICHARDSON, M.D.,
Moseley Professor of Surgery, Harvard University.

I have seen so many disappointments, even after the most hopeful signs, that I am but too much inclined to gloomy prognoses, under all surgical conditions which have thus far proved hopeless or discouraging. This tendency, I regret to say, has been but too often justified by the outcome of all new non-operative treatments of cancer. I cannot but feel, however, that there is coming, and, I hope, soon, a non-operative cure for cancer. In non-malignant lesions, too, I have been but too pessimistic. In tuberculosis—for example, of the kidney—the prognosis has always seemed so bad that I undertook such radical treatment as nephrectomy with about as little hope as nephrectomy for malignant disease.

My point, just now, is the inevitable, or, if not the inevitable, the almost resistless tendency of the world toward gloom in those lesions in which surgery has hitherto proved ineffectual if not useless. These lesions comprise malignant disease; tuberculosis in certain localities; ptoses, and most other complaints in neurasthenia—for which surgical operations are performed. Many emergency lesions should belong to this group, like acute infections of the pancreas with fat necrosis, and all forms of advanced peritonitis. The same hopeful beginnings in the surgery of the cerebrospinal system have been followed by the same too gloomy prognoses.

It is essential that we test surgery, whenever it is reasonably indicated by theory or by induction or by rule of thumb, to see whether, after all, we have not been too gloomy in jumping to the conclusion that, because in theory a certain procedure does not appeal to our reason or common sense, it will therefore prove ineffective in practice.

My title seems one upon which there is very little to be said, and that little of slight value; but to my mind it is suggestive of many surgical questions which have always interested me, and a presentation of which will, I trust, interest you.

The first thought I had when the operation of omentopexy was proposed and performed was one of incredulity—not to say ridicule—that any man of common sense should propose such an operation. It was not until some time after this that I was willing even to talk about it, much less apply the principle to one of my patients. But after many years experience one learns to realize how little he really knows, and how rash he is to condemn as

*Read before the Southern Surgical and Gynecological Association, Nashville, Tenn., eDc. 13-14-15, 1910.

unreasonable or hopeless or ridiculous any suggestion, especially on the ground that it is contrary to experience or even to reason.

It seems to be, with me at least, a regular thing first to oppose, then to tolerate, and finally to embrace a new and perhaps apparently absurd idea. The subject of my remarks—omentopexy—is a case in point. The theory is a good one. Sidetracking the portal circulation is, in plan, all right, but how often could we expect to find veins of communication developing to any really practical size through the adhesions which are made to unite surfaces drained, the one by the portal, the other by the epigastric veins? Absurd, is it not, to expect this in any reasonably brief time—in any time short enough to be of any practical value to a desperate patient? But let the scoffer remember his experience with pelvic tumors nourished by adhesions with the omentum, for example: let him recall, as I can, veins as large as a lead pencil, and arteries as large as the radial—all through adhesions—all developed by an enforced circulation—by the necessity for vascular nourishment caused by the curtailment of the pedicular vessels.

But, whatever my experience with pelvic, especially fibroid tumors, to reckon deliberately upon the development of an abnormal circulation for the relief of so hopeless a condition as the ascites of cirrhosis, seemed really absurd.

Be that as it may, the theory was plain enough, and I undertook the operation at the Massachusetts General Hospital.

The patient upon whom I operated first, in 1904, Mrs. W. (Office Records, Vol. 91, p. 15), is, up to 1910, well. Is it likely that the condition of general good health is wholly due to the relief of a symptom? Is it not possible, at least, that there has been a real restoration or an improvement in the hepatic condition?

But hepatic cirrhosis in its pathology does not admit of cure. Is it not essentially an incurable disease, and is not the disappearance of the chief symptom regarded as a cure more apparent than real?

With regard to that, it would certainly seem unlikely that relief of ascites should follow, or relief rather of the portal obstruction—unless the interstitial pressure of the acini upon the portal radicals is aggravated by the blood stasis which it causes. Just as intestinal obstruction, when not quite complete, is sometimes made complete by increasing with cathartics the proximal intestinal peristalsis, while it is lessened sometimes by overcoming completely that peristalsis, so may it not be possible by relieving an aggravated blood obstruction to diminish also that obstruction? Such a suggestion, of course, implies that an interstitial process is capable of disappearance—a cirrhosis of the liver or of the kidneys a cure. But so far as we know such an event is impossible. Fortunately, perhaps, for our theories or our facts things happen not as we expect or predict, or, as by our theories and observations, they should. A long experience in clinical phenomena will assure a candid observer that there are many so-called *facts* that are not facts, many apparent impossibilities that are possibilities, many so-called hopeless conditions that prove hopeful. But in all cases like those under discussion there is always the possibility of human error and fallibility, the possibility that the real condition which causes an ascites is not as bad or as far-reaching as we suppose.

But this element of error in diagnosis upon which the prognosis as to ultimate recovery may be less grave, is of course begging the question of a possible cure in hepatic cirrhosis. I suppose there is really no more possibility of ultimate restoration of the portal circulation through removal of the cause of obstruction

*That this is probably so, this very case goes to prove, for since this paper was written and read, Mrs. W. has come to me again. There is now considerable ascites. The general condition is not as good as it was at the last report. The abdomen was full of fluid and I removed, by tapping, a bucketful.)

than there is a possibility of a new leg growing from an amputation stump. It will, nevertheless, be of interest to see what the ultimate results are in cases such as I am able to report in this paper.

(M. G. H., West Surg. Records, Vol. 465, p. 27.)

March 11, 1904.

T. G., 29, single, shoemaker.

(Transferred from medical wards with diagnosis of cirrhosis of liver.)

History—Indigestion for a year; jaundice for three months; ascites six weeks. 170 ounces withdrawn March 3, 1904, but filled up rapidly.

Operation—March 19, 1904. Liver small and hob-nailed; spleen large. Talma operation.

After History—Required tapping and again filled up. Condition on discharge; unrelieved to local M.D. on April 31.

Death on May 9, 1904, reported by brother.

(M. G. H., West Surg. Records, Vol. 461, p. 209.)

Mary W., 44, m., housework.

Admitted April 14, 1904.

History—Increasing size of abdomen for one year. Increasing weakness for a year. No severe pain, no vomiting. P. E. Considerable fluid. Liver, fifth rib to two fingers below margin.

Operation—April 16, 1904. Talma.

After History—Discharged unrelieved, with fluid in the abdomen, on May 9, 1904. I saw this patient often during the next six years. The fluid entirely disappeared, and the patient was practically a well woman. In March, 1910, the fluid began to return. I then found a slight amount of fluid in the abdomen, with an umbilical hernia. This fluid increased in amount until it became excessive. I tapped this patient on October 21, 1910. When the abdomen was empty, nothing abnormal could be felt. For practically six years this woman was completely relieved of her ascites.

(W. S., Vol. 545, p. 121.)

John V,, farmer, 31, s. No. 149745. 185 Bunker Hill Street, Charlestown, Mass. Born in New Brunswick. Date of admission, October 4, 1906. Service of Dr. M. H. Richardson.

Diagnosis—Cirrhosis of liver. F. H. negative, P. H. not remarkable; habits good; does not use alcohol. P. I. ascites for four months; shortness of breath; loss of strength. Oedema of legs for three or four weeks. Umbilical hernia, comes simultaneously with abdominal distention. Tapped three weeks before entrance; three quarts serous fluid obtaind.

P. E. W. D. N.; cyanotic man.

Heart—Not enlarged; cystolic murmur transmitted to axilla. Sound all over precardia First sound apex muffled; second clear and snapping. Liver margin not felt; dullness obscured by ascites.

Abdomen distended and tense, shifting dullness in flanks; no tenderness; spleen palpable and enlarged; no increased masses felt. Small umbilical hernia. Fluid more. Sl. oedema of legs, otherwise physically not remarkable.

Operation by Dr. M. H. R. Omentopexy.

At operation escape of much clear fluid (straw-colored). Left kidney normal. Right small and atrophied. Spleen much enlarged, smooth, bluish. Liver small, edge somewhat hob-nailed. Seen by Dr. Whitney, who diagnosed cirrhosis. Omentum sewed to peritoneum. Uneventful recovery.

Discharged unrelieved to O. P. D. with ascites, increasing. Has not been heard from since.

(M. G. H., West Surg. Records, Vol. 611, p. 279.) October 20, 1908.

Charles M., aged 39, dentist.

Family history and patients history negative.

Habits—Tobacco and alcohol—considerable for eight years.

Whiskey, an ounce and a half for two years daily.

Present Illness—Two and one-half months before entrance began to swell at waist. Four weeks later five quarts of clear yellow fluid removed by tapping from abdomen. Cannot work. Tapped four times since above with same quantity removed each time, Feet not swollen. No pain. No dyspnoea. No urinary difficulty.

Physical Examination—Skin, mucous membrane, eyes, mouth and throat present nothing suggestive. Few glands in cervical, axillary and inguinal regions. Heart area normal. Radials sclerosed, Lungs, not suggestive.

Abdomen—Prominent, soft. No masses or tenderness. Shifting dulness in flanks; fluid wave.

Liver—Upper dulness at fourth rib. Lower border not determined.

Spleen—Not felt. Slight oedema of ankles.

Diagnosis—Cirrhosis of the liver with ascites.

Operation—Omentopexy. Records state that liver at operation was found of "small type."

Note—One years later, Nov. 24, 1909, examined by M. H. R.—"No return of symptoms"; scar solid. Looks and feels well. April 25, 1910, no recurrence; well.

The next and last case is not one of my own operations, but the patient was under my care during the summer of 1909. In this case I had the opportunity of studying the satisfactory results of the operation, which was performed by Dr. Stuart of the Brooklyn Hospital. Dr. Stuart informed me that the case was undoubtedly one of cirrhosis of the liver with ascites. He performed the Talma operation in Brooklyn on October 30, 1908.

The diagnosis lay tubercular peritonitis and the ascites of a cirrhotic liver.

The patient recovered from the operation without complication.

In the history of this case there was no alcoholic habit; tobacco was used in moderation. The patient had always been a clean and temperate man. At the time of the operation the spleen was enlarged.

In June, 1909, when I first saw this patient, he was so well that it was hard to believe that he had had cirrhosis. Besides a perfect operative scar, there were no signs whatever. At this time the blood showed nothing remarkable. There was nothing abnormal to be felt in the liver or in the spleen or in the abdomen.

I had the care of this patient all through the summer for various symptoms not connected with the operation, but which possibly may have been the result of the condition of the liver and spleen, He was treated by Dr. Richard Cabot for certain medical symptoms and by Dr. Garland for nose-bleed. When I saw him last he was in perfect condition.

I felt in this case, as I felt in my own cases, so incredulous about the beneficent influence of this operation upon the cirrhotic ascites, that I took exceeding pains to make sure of the patient's condition; and, as in my other cases, there was no doubt whatsoever about the total disappearance of the ascites.

My particular attention was called to the real value of omentopexy for ascites long after I had performed the operation—upon the request of a colleague—and had forgotten it. I suppose I did not have enough faith in it even to inquire the results. When the colleague, Dr. F. C. Shattuck, one day assured me that the operation had proved a complete success, I was sure that there had been a mistake, and that some other surgeon had performed the operation. I have never been able to find out what this case was, and where the operation was performed. It is quite likely that Dr. Shattuck was mistaken.

Be that as it may, the procedure had always seemed to me devoid of common sense—sound, perhaps, in theory, but absurd in practice. It was an operation with just enough reason in it to satisfy the tender conscience of an honest man afflicted with the *furor oper-*

andi. In treating the ascites of cirrhosis; it was to be regarded as a method which physicians and surgeons whose opinions carry weight ought to be extremely chary in recommending lest they encourage the mania for useless operating. But when I present candidly to my own conscience and intelligence the results of this operation—to myself, a sceptic and a scoffer—what can I do but admit that this operation is successful beyond all the averages in conditions that present so discouraging an outlook to medical and surgical treatment as the ascites of hepatic cirrhosis?

Before discussing further omentopexy and its indications, I will say a word about the pathological conditions for which it may be undertaken.

We must remember, of course, that the condition of chronic interstitial hepatitis, or cirrhosis of the liver, is the disease, and that ascites is merely a symptom. Operation, then, for the relief of ascites is but a device for the relief of a symptom—like an operation for the relief of oedema of the feet and legs in kidney disease, or of the anasarca of valvular obstruction of the heart. And, in point of fact, is not this really the case? Can we in theory expect the least relief to the hepatic lesion itself when we overcome by omentopexy that obstruction to the portal circulation that results in ascites? Is there any reasonable expectation of benefitting the real condition of interstitial proliferation and ascinal obstruction?

To put the matter as plainly as I can in the case of Dr. M., here was a man filled for years with alcohol until he presented the gin-drinker's liver in the most aggravated, distressful and hopeless form. I do not believe that I should have undertaken the operation but for the assurance just mentioned of Dr. Shattuck that I had previously relieved a patient of his under similar circumstances. Even after Dr. Shattuck's repeated assurance, I could not but think that he was mistaken, for I was totally unaware of any such good work on my part, and one surely is not often disposed to dispute his own success. But, in spite of this encouragement, Dr. M.'s case was too bad for operation to be considered, except as a straw to a drowning man. Although the operation was performed in fear of death upon the table, he sustained it well. Convalescence was not even eventful; it was simple, straight-forward and speedy. The patient left the hospital, and I supposed that he had died long ago. On the contrary, he became perfectly well, and has remained so. He is able now to attend to his practice, and, as far as he or his wife knows, he is, as I say, completely cured.

Now what can a doubting Thomas say to that? Perhaps the disease was not cirrhosis, though at the time of the operation, with the liver in my hands, I thought that it was. But, whatever it was, the cure is complete; and this fact, with the others that I bring here today, have made upon me a very strong impression. I need hardly say that in the ascites of cirrhosis I feel that we have not a bare possibility of temporary benefit, but an encouraging possibility of years of good health. I feel that omentopexy—while I may have been unusually lucky with it—is of real value in surgical therapeutics. And, finally, I feel convinced that my objections, both in theory and in practice, have been overcome, and that I shall hereafter in these distressing cases operate with a feeling of encouragement in my measures rather than discouragement. Not that I would, without full explanation advise any operation in which I had no real confidence, even if it was based upon good theory; but, as I now feel about this operation, I would advise it as one well based upon good theory, and as one sufficiently practiced to show real efficacy. I cannot believe, however, that we are going to get any considerable percentage of such cures as in the cases that I have reported today.

I do not intend to consider in any great detail the diagnosis of abdominal conditions

indicating omentopexy; but here and at all times I deem it important, in the consideration of indications for operation in a disease like cirrhosis of the liver, to discuss the possibilities of error in diagnosis. It would seem —would it not—easy to make a positive diagnosis of cirrhosis of the liver? Is it always easy, and is the diagnosis so precise that no room for serious error remains? I will not consider the possibility of errors in the history, errors in physical examination, and errors in reasoning; but I will admit them all. I will even emphasize the frequency of their occurrence, The evidence upon which I base the statement that the diagnosis of cirrhosis of the liver is open to serious possibilities of mistake is wholly that of experience. Without searching through my records to find a number of cases of mistaken diagnosis, I can recall a case that I saw many years ago in Dorchester, in which the diagnosis of cirrhosis of the liver was made by a very eminent professor of medicine. It seemed to me, for some reason, that the case was one of ovarian cyst. I acted upon this diagnosis, advised operation, and removed from a young girl an enormous ovarian cyst which filled the abdominal cavity so completely with its thin contents as to give to the touch the sensation of simple ascites.

It is idle to say that one can always distinguish between ascites and ovarian cyst by the varying forms of dulness. There are cases in which it is impossible. There are cases of ascites in which there is no central anterior tympany, but in which there is lateral. There are cases of ovarian cyst in which there is anterior tympany and the absence of tympany in the flanks. In a word, there are anomalous physical symptoms, and there are anomalous symptoms in the history. The really great diagnostician must take into account these rare exceptions to the rule. In this case of the young girl in Dorchester that I have mentioned I happened to be right. It was only two weeks ago that I made a positive diagnosis of unilateral ovarian cyst in the case of a patient of Dr. Edward Richardson's. The woman was desperately sick; but I felt sure that a quick operation would enable Dr. Richardson to remove successfully what I felt convinced was a non-adherent, simple, single ovarian cyst. The case proved to be one of cirrhosis of the liver with ascites.

Many years ago, at the Massachusetts General Hospital, under the diagnosis of ovarian cyst, I operated on a young girl and found cirrhosis of the liver. There have been other instances in which ascites has been diagnosticated as ovarian cyst, and other instances in which ovarian cysts have been diagnosticated as ascites—by myself, I mean.

We have, therefore, as an indication for operation under all diagnosis of ascites from hepatic cirrhosis, the possibility of an ovarian tumor or other easily remedied pathological lesion. This is perhaps the first indication—that of error—and this indication is seen in all cases in which the diagnosis of hepatic cirrhosis is positive. There is, therefore, the possibility of some easily and effectively removed cause. Failing to find that fortunate error in diagnosis, we have remaining the ascites itself and the practicability of a rapid adhesion-formation operation between the omentum and the abdominal wall.

I do not mean to say that the diagnosis of cirrhosis of the liver is so diffcult that it cannot be made practically impregnable. I believe that it can, especially in patients in whom tapping has been practiced. The ascitic fluid of cirrhosis ought to permit, in the laboratory, a positive demonstration. In order to avoid the error of operating upon conditions too far developed for a reasonable hope from omentopexy, it would perhaps be well always to take a small portion of the fluid either after complete tapping or through a fine needle. This specimen can be sent for laboratory confirmation of the diagnosis.

The next indication, and perhaps the most positive indication for operation in cirrhosis of the liver with ascites, is the absence of contra-indications. I ought perhaps to consider

only the contra-indications, and to say that in the absence of any positive contra-indications to this operation, it should, through the prognosis as demonstrated at the present time, be performed in all cases. A positive contra-indication to the operation would be found in condition of the heart, lungs or kidneys making the procedure unduly hazardous. In simple, uncomplicated cirrhosis of the liver, the operation is not, I think, one of any particular risk. The operation, as I have performed it, has been swift and safe.

The contra-indications to the operation on the ground of danger are seen in the mortality from the operation itself, or in complications of the operation or of convalescence, or in unpleasant sequelae. In the four operations which I have performed there has been no mortality. In the subsequent history—during convalescence and in after years—there have been no disadvantages, either in hernias, in the adhesions themselves, or in other things.

It is fair to state, therefore, I think, that there are no contra-indications to this operation in the mortality, in the complications, or in the after results. It does not follow, of course, that all cases will succeed, or that a large percentage will succeed; but if one patient in five—or two in five, or 50 per cent—are relieved of this distressing symptom of ascites, then the end results after this operation are good enough to be strong indications for the operation.

In considering the indications for operation, we must remember that these are desperate and hopeless cases, and we naturally expect a desperate operation and a large mortality; but the results show that the operations are not desperate and the mortality is not large, The operation is certainly a quick one, there is little if any hemorrhage, and, except for the patient's depressed general condition, there is no reason why this operation should be much more dangerous than a simple exploratory laparotomy.

In reviewing these cases of cirrhosis of the liver, as I have seen them, there are many instances in which the patients come to the attention of the surgeon so late that the conditions are truly forbidding.

In considering the contra-indications of a really forbidding mortality the surgeon must remember that it is impossible always to predict. In the most desperate abdominal cases the results sometimes prove wonderfully satisfactory, whereas in some encouraging cases the results are grave out of all proportion to the severity of the operation. In a word, in considering operation, one must use common sense. I should consider that the operation of omentopexy in a patient with anasarca, with a poor heart, with a condition of impending death, would be one of folly. In such cases the part of wisdom would be to try to improve the condition by medical treatment, to tap frequently, to increase the patient's strength. It is, of course, understood that the patient to be operated upon is in fair condition. It will not do for the physician to keep his patient until she is *in extremis,* and then send for the surgeon, as used to be the rule in appendicitis, If this operation is to do any good, physicians must send patients to the surgeon early in the disease.

The operation of omentopexy is a perfectly simple one, the principle being, of course, to effect communication between the portal system of veins and the veins of the abdominal wall. As the omentum is filled with radicles of the portal vein and is freely movable, it presents the best surface for the attachment of these veins. I bring down to one side or the other of the incision perhaps six or eight inches (in length) of omentum, and stitch it to the abdominal wall by catgut sutures or silk sutures in such a way as to bring broad omental surfaces against broad peritoneal surfaces. With a large omentum one can bring many square inches of omental surface and peritoneal surface together. The success of the operation depends, of course, upon the freedom of circulation between the portal system and

the system of epigastric veins, My experience would lead me to say that, in the adhesion of the omentum to fibroid tumors and to ovarian tumors, if the free circulation between these surfaces permits its development, if the blood supply through the usual channels has been impeded, nature will establish collateral circulation with greater rapidity than if the circulation through the pedicle were unimpeded. I take this to be a fact; but I have no means of demonstrating it. As I say, I have seen very large veins and arteries passing between the great omentum and a large ovarian or uterine tumor. The amount of circulation between these two systems must be great. I have had no opportunity of demonstrating the size and number of veins and arteries that this operation causes to appear.

As in all abdominal cases, it is a good plan, when the incision is large enough, to pass the hand rapidly over the chief abdominal viscera, to see that they are in good condition, and that no error in diagnosis is being made.

What is to be gained by omentopexy? To answer this question, we must consider, on the one hand, the discomforts and dangers of excessive ascites and its treatment by tapping; on the other hand, the dangers of omentopexy, its failures and its necessarily limited good, and the comparatively brief period of relief from ascites which at best the operation may afford.

In the consideration of these points in the order of their importance to the patient, the first is the last one mentioned—the period of relief which the operation may at its best afford.

I am not able to give as complete results from my operations, or from the operations of others, as I should like; but, in those cases which I have examined and watched, there is undoubtedly a field for the employment of this procedure, And, as I have said, my conversion to the advocacy of this treatment has been in spite of downright, and, it seemed to me, justifiable opposition to the measure.

I regard remote results as more important than immediate ones, because there is so little of enjoyable life in a case of rapidly-recurring ascites. The operation, even if fatal, takes from the patient but little; while, if successful, it adds very materially to life's sum total of enjoyment.

There is this objection, with which, however, we can have but little to do: that, with the recovery from the ascites, will remain the cause in the liver, and probably the cause in the patient's habits. Be that as it may, the cure of ascites, whatever becomes of its cause, seems to me well worth the attempt as far as any objections of this kind are concerned.

EDITORIAL DEPARTMENT

SEALE HARRIS, M.D., *Editor-in-Chief*.....*Mobile, Ala.*
H. A. MOODY, M.D., *Managing Editor*.....*Mobile, Ala.*

ASSOCIATE EDITORS

J. A. WITHERSPOON, M.D.....*Nashville, Tenn.*
W. D. HAGGARD, M.D.....*Nashville, Tenn.*
W. A. BRYAN, M.D.....*Nashville, Tenn.*
W. M. LITTERER, M.D.....*Nashville, Tenn.*
W. M. CULLOM, M.D.....*Nashville, Tenn.*
OSCAR DOWILNG, M.D.....*New Orleans, La.*

OFFICERS OF THE SOUTHERN MEDICAL ASSOCIATION.

President:

DR. ISADORE DYER.....*New Orleans, La.*

Vice-Presidents:

DR. WILLIAM LITTERER.....*Nashville, Tenn.*
DR. W. P. ADAMSON.....*Tampa, Fla.*
DR. W. C. LYLE.....*Augusta, Ga.*
DR. T. D. PARKE.....*Birmingham, Ala.*
DR. J. B. GUTHRIE.....*New Orleans, La.*
DR. A. G. PAYNE.....*Greenville, Miss.*

Councillors:

DR. H. H. MARTIN, *Chairman*.....*Savannah, Ga.*
DR. J. M. JACKSON.....*Miami, Fla.*
DR. B. L. WYMAN.....*Birmingham, Ala.*
DR. D. M. JONES.....*Brookhaven, Miss.*
DR. A. B. COOKE.....*Nashville, Tenn.*
DR. OSCAR DOWLING.....*New Orleans, La.*

Secretary-Treasurer:

DR. SEALE HARRIS.....*Mobile, Ala.*

Section on Medicine:

DR. WILLIAM KRAUSS, *Chairman*...*Memphis, Tenn.*
DR. C. C. BASS, *Vice-Chairman*...*New Orleans, La.*
DR. H. E. MITCHELL, *Secretary*...*Birmingham, Ala.*

Section on Surgery:

DR. DUNCAN EVE, *Chairman*.....*Nashville, Tenn.*
DR. MICHAEL HOKE, *Vice-Chairman*....*Atlanta, Ga.*
DR. W. P. MCADORY, *Secretary*...*Birmingham, Ala.*

Section on Ophthalmology:

DR. W. M. CULLUM, *Chairman*....*Nashville, Tenn.*
DR. RICHMOND MCKINNEY, *V.-Chmn.*.*Memphis, Tenn*
DR. U. S. BIRD, *Secretary*.....*Tampa, Fla.*

Next Meeting Hattiesburg, Miss., November 11-13, 1911.

The Meeting of the Southern Surgical and Gynecological Association

The Nashville meeting of the Southern Surgical and Gynecological Association, in December, was pronounced by those in attendance one of the most enjoyable meetings that this always suceessful Association has enjoyed. Judging by the attendance, which was the largest in its history, it was an unqualified success. The largest number of papers was read and discussed which has ever been presented to any previous meeting.

This issue is devoted especially to some of the papers which were read at the time, including the presidential address of Dr. W. O. Roberts. This will have a great historical value, as it deals with the surgeons of the South in an accurate and just way.

The present number is indicative of the high class of scientific work accomplished at this meeting. It will be noted that while the officers and meeting place of this Association are Southern, the scope of membership embraces many of the prominent men of the North and West.

The educational value of an active body of earnest workers like this is difficult to estimate. The Journal is gratified to be the vehicle through which a number of its papers on advanced lines are presented to the medical profession of the South. While the great body of our readers are active practitioners and perhaps may not be interested in the technical achievements of surgery, they are nevertheless greatly interested in its advancement. He is the best physician who is always in close affiliation with the surgical side of his profession. The knowledge of such a well trained physician exerts a leavening effect upon the surgical world. The physician in turn is enabled through his acquaintance with the surgical features of diagnosis to wisely determine not only the precise nature of a given case, but also to determine as to the

necessity for surgical intervention. Without the knowledge, however, of surgical indications and limitations a physician is greatly handicapped in his services to the community.

The Nashville meeting was, aside from its scientific accomplishments, a very delightful one. The resident members, together with the profession at large, took the entire membership and their guests to the historic Hermitage. Their transportation required forty-three automobiles. A delightful repast was served, after which an inspiring address was made by Dr. J. A. Witherspoon on the "Life and Character of Gen. Jackson." Many other delightful social entertainments were provided by the resident members.

Dr. Rudolph Matas, of New Orleans, was elected President, and his prodigious work in surgery certainly entitled him to a front rank among American surgeons. There is probably none of his contemporaries who has such a wide knowledge of surgical literature. He has been a most ardent student. As a teacher his fame is acknowledged. The original contributions which he has made to surgery entitle him to the gratitude of his profession, as well as to that of humanity at large. A better man could not have been chosen for the place.

The next meeting will occur in Washington City, and Dr. J. Wesley Bovee, a long time member, will be Chairman of the Committee of Arrangements.

Dr. W. D. Haggard, who has been Secretary for many years, was continued in his office.

The Journal is pleased to be privileged to place before its readers a special issue for this month, as has been its custom in the past, and bespeaks for the surgical themes presented the careful perusal to which their merits so richly entitle them.

The Yersin-Roux Serum

Acting Assistant Surgeon A. M. Sinclair, of the U. S. P. H. and Marine Hospital Service, while stationed at Honolulu, writes in the A. M. A. Journal of February 4 concerning his observations of the effects of injections of Yersin-Roux Serum as a protection against bubonic plague. He states that in 1907 he had experience with this serum in 20 cases of plague, and it caused him "to regard its use most favorably." Unfortunately the records of those cases cannot be found, though he had thought they were in possession of the "Territorial Board of Health." However, he now reports his observations on the "cases of three Russian immigrants, all of the same family: the father, aged 45, one daughter, aged 15, and another daughter aged 8 years." Dr. Sinclair describes the facial appearance that suggested plague, as "the wrinkled brow, half-closed eyes and drooping mouth" which caused "that worried look so frequently accompanying plague."

A smooth, indurated swelling, "about the size and shape of a hen's egg" was noted under the lower jaw, "exceedingly painful under manipulation." There was little redness over it. Temperature 102° F. The doctor refrained from puncturing the bubo because he had observed that "tampering" with bubos of that character in the cervical region favored sloughing which endangered many important structures.

The father was in a similar condition, but with a bubo in the groin "in which a bacillus resembling that of plague had been found." A diagnosis of plague was made and the patient was removed to Quarantine Island.

On the day following the first examinations unmistakable symptoms of lung involvement supervened and the hebetude increased.

"At 6 p. m. she received an injection of 30 c. c. of the serum." The supplementary treatment consisted of a tablespoonful of whiskey in a glass of milk every four hours, alternating every two hours with 5 minims of tincture of digitalis and 1-40 grain of strychnine." The record shows that on the succeeding day she slept well and her temperature fell from 120° F. to 99.6° F., the pulse, however, remaining the same, 120, and the respiration

increasing from 32 to 36. By evening the temperature rose to 103° F., pulse to 128, respiration to 38. The case progressed unfavorably and patient died on the 4th day from first observation.

The case of the father is more fully described, but the salient points show that he had a severe attack of plague, with one large bubo in the right groin, whence spread a chain of involved glands. Inoculations of guinea pigs from the bubo proved promptly fatal from plague. A mongoos inoculated from the spleen of the guinea pig died in eight hours.

Forty c. c. of serum was injected June 8th. As in the case above referred to, his temperature fell at first, then rose again, while the respirations did not respond to the treatment. On the 12th his temperature was lower, but his general condition worse. He then received 30 c. c. of serum. The next day his temperature fell to normal, his respirations from 42 to 26, and he progressed steadily to recovery.

In describing the third case, that of the girl 8 years of age, Dr. Sinclair uses this expression: "A small bulla, about the size of a ten cent piece, was found on the inner side of the right ankle. Its characteristic, smoky-blue color, and surrounding area of redness, left no question in my mind that it was the site of inoculation of plague by a flea or other agent." This comment is worth remembering by physicians at seaport towns.

She received 30 c. c. of the serum on the second day, followed by the supplementary treatment before described. The disease followed a course similar to that of the father, and the patient recovered. The author presents these cases as illustrating "the three groups into which fell the vast majority of cases I have treated with serum." "Case 1 illustrates that group in which the serum fails to effect a cure; Case 2, that group in which a second injection is of value; Case 3, that group in which one injection is sufficient."

Case 1 had been ill 4 or 5 days before receiving treatment, case 2 about 2 days, case 3 about 36 hours, showing that the changes in temperature were due to the serum and not to the stage of the disease.

In reading the records one wonders why the administration of serum was, in each case, postponed until the day following first observation.

The author prefers the "dry serum," "made by the Pasteur Institute," believing it to be far superior to the liquid serum, and gives minute directions for its management.

It is to be hoped that this condensed account of Dr. Sinclair's very valuable paper will lead every physician living at a point liable to invasion by plague to procure a reprint of this copy, or a copy of the A. M. A. Journal of February 4th, in which it appears in full.

Discrimination

How may the reader of contemporary medical literature discriminate between the valuable and the untrustworthy among the hundreds of articles that in every successive issue invite attention and interest?

To reach a correct answer to the above question one must have some standard of value by which to measure their worth, but what should that standard be? If, in a matter of treatment, a conclusion is based upon the results of clinical observations upon thousands of cases similar in character, treatment and results, then of course the author is entitled to credence; but if his conclusions are at variance with pre-existing opinion and are based upon ten or twenty successive cases, what then? Should they be discarded on that account and the author condemned as untrustworthy? Or suppose a series of experiments on dogs, frogs, guinea pigs, rabbits and cats leads to certain positive conclusions, yet a doctor presents clinical records of a score of human cases wherein, though the same substance was used, in proportionately the same amounts, the results were materially different from those recorded from their use upon

animals, is it necessahy to consider either investigator mistaken or inaccurate?

For instance, laboratory therapeutists consider a certain powerful drug of vegetable origin identical in effect with another powerful drug of vegetable origin, and suggest that it be dropped from materia medica; while hundreds of clinical observers claim that the second drug has killed many victims while the first named has no deaths to its charge, and that the first named drug shows immense therapeutic value in conditions wherein the second is inadmissible. What are we to do in view of these opposite claims? By what standard shall we measure statements and by what litmus test paper may we know truth from error? These are difficult questions to answer, but there are generally certain indications in a paper that suggest to the thoughtful readers its true value.

The present consideration refers to Tincture of Veratrum Viride and Tincture of Aconite, and is suggested by statements in recent text-books. The writers on pharmacology nearly all follow each other like sheep jumping over a wall in writing of veratrum, and some recommend that it be dropped from the pharmacopeia, since its therapeutic properties are "identical with those of aconite." Why is this? Certainly they would not recommend the substitution of Tincture of Veratrum hypodermically, knowing from long experience that in thermic cases of eclampsia Veratrum is the sovereign remedy. Do these mutually confirmatory authors really believe that the hundreds of physicians who give the testimony are idiots or prevaricators, It must be one or the other.

Certainly such eminent authorities would not claim that they were uninformed concerning the mass of clinical records testifying to the use of Veratrum viride in eclampsia! There must be "a screw loose somewhere."

The Journal will highly appreciate any testimony its readers may be prepared to offer along these lines. Who among you, friends of the S. M. J., has used Veratrum in eclampsia? *Tell us about it.* Your communications will not only be welcome; they are earnestly desired.

Tuberculin Redivivus

There seems to be a revival of interest in the use of tuberculin to induce recovery from tuberculosis. Reports of favorable results from its use are beginning to appear in the medical journals. It would seem that not only are the newer tuberculin preparations undergoing the experimental test, but the older forms are also used. In a recent article by Geo. C. Crandall, M.D., published in the Journal of the Missouri State Medical Association for February, the doctor presents an interesting series of clinical histories of tubercular patients wherein tuberculin treatment was employed with more or less gratifying results. The article presents summaries of the analyses of 24 such cases, describing physical condition at beginning of treatment, form of preparation used, size of dosage and apparent results. Of these 24 cases fourteen had pulmonary tuberculosis, two were cases of tuberculous adenitis, and the remainder had tuberculous affections of the knee, conjunctiva, spine, elbow, rectum and kidney respectively. Diagnosis was positive, reached in some cases by the physical indications, in others by laboratory demonstration. In most of the cases both O. T. and B. E. forms of tuberculin were employed. The initial amounts administered ranged from 1-50,000 milligram of O. T., in an advanced and apparently hopeless case of pulmonary tuberculosis of several years standing, to 1-1,000 of a milligram in newer cases in which there was less cause to dread the severe autoreaction which at first brought tuberculin into disrepute. These small amounts were injected at intervals of from 3 to 7 days, and caused neither pain nor abscesses. For convenience in subdivision the author purchases the crude tuberculin, which he reduces by decimal dilution with "normal saline solution," for immediate use, or "0.3% solution of trikresol or carbolic

acid when it is to be kept 'at room temperature' from one to four weeks."

He doubts the utility of Wright's opsonic index as a criterion of useful effects. He considers the probability of anaphylaxis from the use of tuberculin almost nil, though some years ago when using serum he observed some indications of that character. This view is supported by many observers who believe it is the seurm, and not the antitoxin it contains, that precipitates the reaction known as anaphylaxis.

In treating these cases the author gradually increases the dosage of tuberculin, until towards the close some patients receive as much as O. T. 1-10 milligram and B. E. 1-10 mgm. every week (case 11). In addition to the specific treatment his patients are given the full benefit of modern hygienic and sanitary environment and nourishment. His recorded results are such as to warrant every physician who has the time and ability to renew the clinical experiments with tuberculin, but in its more recent forms, and in doses which would, a few years ago, have appeared to him absurdly small and inefficient. Any who reach such a conclusion should, by all means, procure and read the article in question.

Vital Statistics

The U. S. Department of Commerce and Labor, Bureau of the Census, of which E. Dana Durand is the Director, is making strenuous efforts to place in the hands of physicians all over the United States a copy of a neat litle pamphlet entitled *"Physicians' Pocket Reference to the International List of Causes of Death."*

In a motto beneath the title appears the following sentence, written by Dr. Charles V. Chapin: "The registration of vital statistics is the firm basis on which the whole structure of sanitary science and practice must rest." The pamphlet is an urgent plea to the medical profession to support the respective State Health Departments in their efforts to secure reliable vital statistics.

The little book, suitable to the vest pocket, contains condensed lists of the proper designations of the various causes of death as they should be named in official reports, and, per contra, quite a number of improper ones, such as "dropsy," "heart failure," "marasmus," "debility," "old age," and so on; terms which convey no information sufficiently definite to admit of classification. The leaflet is distributed with the cordial approval of state authorities and contains matter of sufficient interest to warrant examination by every physician. Its proper place is in some certain pigeon hole convenient to the desk, one reserved for reference material. Then, when the report of a death becomes necessary, it will afford a knowledge of precisely the technical name preferred by the health authorities in making their records.

Put it safely away, doctor, when you receive it, where you can promptly lay your hand on it.

Mistaken Self-Interest

A curious incident recently occurred when Dr. W. H. Sanders, State Health Officer of Alabama, placed before the Legislature a bill one section of which made it unlawful for a physician to advertise himself or his practice "whether through newspapers or other periodicals, or by circulars, or otherwise, in such a manner as tends to deceive the people *in matters pertaining to health.*"

It would seem to an unprejudiced observer that no good citizen ought to object to a law against deceiving the public in matters of such importance as health, but "the palladium of our liberties," the newspapers, or some of them, objected furiously. They declaimed that every free man had a right to advertise his business when and where he saw fit to do so, and that no law should be passed to prevent him. And so with much eloquence they proceeded to muddy the legislative waters until a majority of the committee in charge of the bill were so impressed that they reported the bill adversely. Of course the leaders of

the opposition to the measure had not misunderstood it. They knew that the bill did not propose to keep doctors from advertising themselves and their business whenever and wherever they saw fit, so long as they so worded their buncombe that it would not "Tend to deceive the public in matters pertaining to health."

Their columns are full of praise for the laws that prevent unscrupulous manufacturers from deceiving the public in matters pertaining to the purity of foods and drinks, but when the State Health Officer tries to have the public protected from conscienceless quacks who rob the people of exhorbitant sums by promising to cure cancer and consumption, and not only take their money but also waste the precious time during which nature directed by science offers some hope, here come ye editors with the cry of "constitutional rights," robbing a man of his right to do business in the same way others do it, and all that.

Though the law could not be misunderstood, it could be, and was misrepresented, and to such a degree that all over the state, even among doctors, a sentiment was worked up against it.

However, the bill was finally recommitted, and being properly explained and understood, will probably pass. One obstacle will be so-called consistency, that having declared a horse fifteen feet high, instead of fifteen hands, stands by the record.

There is no competition between the regular physician and the quack. The latter draws his revenues from a different class of people, a class that needs legal protection more than do those who are too well informed to be deceived by preposterous pretensions.

Of course the Journal is sorry for the publishers who will, if this bill becomes a law, lose the profits now reaped from broadside quack advertisements, but they will not really lose in the end. The Journal knows. Within twelve months it has declined to publish thousands of dollars worth of advertisements because they "tended to deceive the public on matters of health." Instead of losing, the Journal has profited by so doing. "Honesty is the best policy" not only according to "Poor Richard," but according to experience also.

An Object Lesson in Immunization

Flexner and Clark announce in an article on experimental polio-myelitis published in the Journal of A. M. A. February 25th, among other points of interest, that "normal human serum has no power to neutralize the virus, while serum from recovered cases of poliomyelitis has."

The test is made by procuring two specimens of blood-serum, one from the vessels of a normal human being, the other from a recovered case of poliomyelitis. Each of these is mixed with some of the filtered virus and incubated at 37° C. for a few hours. Then different monkeys are inoculated from the two specimens. The result is that the animals inoculated with the virus incubated with normal serum contract the disease, while those inoculated with virus incubated with serum from recovered cases of poliomyelitis escape it.

The conclusion is unavoidable that the presence of the germs in the tissues and the circulation of the poisons they generate cause the system to evolve an antidote or an antitoxin which is sufficiently effective to prevent the multiplication of the parasites or to neutralize their poison, and, in either case, to impart what we call immunity to the exposed organism. This immunity principle, whatever may be its character, has thus far been found only in the blood of men and monkeys who have had the disease, and persists for several years. It is not found in the cerebrospinal fluid or nerve tissues excepting in the early stages of some cases. So much for nature's way of producing immunity from the disease.

Following the same lines, it is found that injection of serum from a cured case protects an exposed subject from developing the disease. Success in controlling the disease in cases already established has not been satisfactory. Several experimenters think they

found some protection in the use of hexamethylenamin, in the way of disinfecting the cerebro-spinal fluid. None of them, however, considers it a specific.

Concerning the nature of the virus itself there is no positive knowledge. That it is an organism and not merely a chemical poison is indicated by the necessity for a period of incubation after inoculation. If it were a chemical substance in solution some reaction would follow immediately on inoculation. No filter has been found, however, fine enough to separate the organism from the serum.

It is believed that the virus can survive in the naso-pharynx of the monkey for several months, though during the latter part of that period the nerve tissues are free therefrom. This indicates the importance of protracted isolation and thorough disinfection.

The work that Flexner, his associates and followers are doing is epoch making in medicine, and their names should be remembered and honored when those of Alexander and Napoleon are forgotten.

Let's Encourage the New Recruits

The Interstate Medical Journal, in an interesting editorial, warns the medical brethren who write to be careful in reaching conclusions regarding the recent developments in chemotherapie, referring chiefly, it is evident, to the therapuetic investigations now being everywhere pursued concerning salvarsan.

He speaks with little respect of the investigator who, though unskilled in the technic of chemotherapy, does not hesitate to weigh his slight clinical experience with salvarsan against that of the German investigators who introduced the drug, and to visit his failures upon them. Perhaps too many ambitious young surgeons and physicians are trying to impress the medical public with their experiences, and to ride into prominence upon the sensational results claimed for the new drug. But though this may be true in a few instances, the reader who *feels* the spirit behind the lines realizes that though some personal ambition is evident, the moving power is the enthusiasm stirred by the great possibilities foreshadowed, and the unconscious impulse to help as much as possible in the new campaign against a grievous infliction that has cursed the human race since the dawn of history. So let them write, doctor, and publish their "views" and "conclusions," even if immature. Great good must somehow come from such a universal hope. Let's push it along, and not hold back in the grand march to conquer syphilis.

A Good Example

Glancing over a paper sent to the writer's desk his eye was caught by the following:

DOCTORS ELECT OFFICERS.

"The Polk County, Georgia, Medical Society reorganized last week by the election of the following officers: President, Dr. H. M. Hall; 1st Vice-President, Dr. W. A. Chapman; 2nd Vice-President, Dr. E. M. Richardson; Secretary-Treasurer, Dr. W. W. Tison; Delegate to State Convention, Dr. R. N. Spinks.

"This organization has inaugurated a useful work here, its members taking turns in delivering talks on practical subjects at our city public schools. The first address was that of Dr. Wm. Bradford, an introductory talk. Dr. W. A. Chapman gave a talk Friday afternoon on 'Foods,' and the next address will be by Dr. J. J. Cooper, to-morrow afternoon."

The above is an account of a most useful undertaking, one of a character frequently recommended by the Journal to its readers. Every County Medical Society in the South which has not already inaugurated a plan for such educational meetings in their respective neighborhoods could profit by following the example of the Polk County doctors. By having the appointments made by the Society the suspicion of self advertising would be removed, much needed information would be imparted to fellow citizens and the tie of confidence would be strengthened between the medical profession and the laity. Probably there does not exist a neighborhood wherein a few plain

timely lectures on the way to avoid the infection of tuberculosis or typhoid fever might not result in the saving of one human life from unnecessary destruction. Think of the enormous opportunity for service to God and humanity that is thus carelessly neglected all over the country. Gentlemen, all of you have County Societies. Get busy!

"Not to be Refilled"!

These words should be plainly, or even prominently printed on the prescription blanks of every physician just above the line whereon he is to sign his name. If the prescriber knows that his patient will have to take a certain remedy for 30 or 60 days, he can order a sufficient quantity to last that length of time. If he does not feel sure that such is the case, he should be given an opportunity to ascertain the conditions after trial of a moderate quantity. If a prescription is intended to meet a temporary emergency, it should not be refilled without the doctor's order. The more efficiently such a temporary prescription brings relief and comfort to the patient, the greater is the danger of an improper repetition, injudicious use, and the beginning of a drug habit. Though courts of law may force a druggist to surrender to the patient the prescription for which he paid the doctor, it cannot compel a conscientious pharmacist to refill it in the face of explicit orders to the contrary.

A Repetition

Two or three of our advertising patrons whose contracts have expired, which contracts cannot be renewed because the preparations in question have not been approved by the A. M. A. Council on Chemistry and Pharmacy, have claimed that one more publication of their advertisement was due them before their contracts expired, contrary to our own understanding.

Rather than have any patrons dissatisfied with our way of doing business, we have replaced their advertisements in the present number.

They will not appear in the April issue, and with that number will disappear the last advertisement of any unapproved preparations so far as this Journal is concerned.

Some of our most esteemed subscribers, and also some of our advertisers of approved preparations, have asked about the continued appearance of certain proprietary advertisements in our pages.

We trust that the foregoing explanation will enlighten them satisfactorily on this point.

We take this opportunity to repeat our expressions of regret at being obliged by circumstances to temporarily decline the proffered advertisements of many products whose display has in past months appeared in our pages. We hope every proprietary medicine manufacturer will ultimately get its preparations into line.

An Unintentional Omission

Through some unaccountable oversight several valuable papers which were published in the February number of the Journal omitted to show the name of the progressive and important Association before which they were read. The articles referred to are "The Gamete Carriers: Their Role in the Etiology of Malaria," by Graham E. Henson, M.D., Crescent City, Fla.; "Malarial Manifestations in the Eye," by M. H. Bell, M.D., Vicksburg, Miss.; "The Quick Macroscopic Typhoid Agglutination Test, Its Application and Advantages," by C. C. Bass, M.D., New Orleans, La.

These papers were read before the Southern Surgical and Gynecological Association at Nashville, Tenn., December 13, 14, 15, 1910, and the careful attention and thorough discussion they received showed that their great value and usefulness was appreciated by the flower of the medical profession, there assembled.

Besides the above named papers, the statistical article on malaria, by Dr. John M. Swan,

Secretary of the American Association of Tropical Medicine, and Medical Director of the Glen Springs, Watkins, New York, which has been divided into three instalments, of which this was the concluding section, was presented by us without proper indication that it was part of the official records of the above named Association.

Some mistakes are unavoidable to mere human effort, but such a concatenation of errors calls for care that it shall not be repeated. We apologize to the authors, to their readers, and to the splendid Association before which they were first read.

THERAPEUTICS.

ALTERATIVES.

At the head of this class stands Hydrargyrum, Mercury and its salts. It is a bright, silvery metal, liquid and very motile at ordinary temperatures, stiff and doughy at a little above freezing, and capable, when warm, of passing through buckskin, which thus acts as a filter, separating from it impurities, and such other metals as gold or silver with which it was combined. It volatilizes at high temperatures as likewise do some of its salts.

Metallic mercury is seldom used in medicine save in the combination known as Massa Hydrargyri or Blue Mass, Hydrargyrum cum Creta, or Blue Powder, in each of which the metal is suspended in a finely divided state. Also Unguentum Hydrargy Mercurial Ointment, is composed of the metal rubbed up with oily substances. This preparation is used for introducing mercury into the system through the skin. It is of great efficacy thus used in the treatment of old cases of syphilis, and it is sometimes thought that the well known Hot Springs of Arkansas owe their reputation for the cure of this disease more to the free use of Ung. Hydrarg. Dil. as directed by the resident physicians than to any virtues the thermal waters posses.

The Unguentum Hydrargyri Dilutum just mentioned contains only 33.5 per cent of metallic mercury, and is commonly called Blue Ointment, while the Unguentum Hydrargyri containing 60 per cent is specified as mercurial ointment. This distinction should be remembered, for it is a practical one.

Massa Hydrargyri is an agreeable and gentle laxative, containing confection of roses, and other pleasant substances. In doses of 10 grains (0.64 Gm.), taken at bedtime it causes dark, soft stools the following morning. It is more frequently used in smaller amounts combined with other purgative drugs, thereby forming a pill much smaller than would be effectual if composed of Blue Mass alone.

Hydrargyrum cum Creta, Chalk and Mercury, is useful in the summer diarrhoeas of children. It is applicable to those cases with whitish, bluish, pasty stools. From gr. ⅛ to gr. ¼ (0.008) to (0.01) can be given every hour till the character of the stool changes. It sometimes causes so much nausea that children can be better treated with other Mercurials. It is recommended by Hutchinson for the treatment of Syphilis in ¼ gr. doses (0,01) three times a day.

Hydrargyri Chloridi Mite, or Mitis, Mild Mercurous Chloride, Calomel, is the salt of Mercury most frequently used for internal administration. It is a smooth, heavy, white, impalpable powder, without taste or smell. It is insoluble in any of the ordinary solvents, and is readily volatilized by heat, leaving no residue. It is unaffected by age or exposure to the air, though it may assume a slightly creamy tint with time, as is also the case when it is thoroughly triturated. Internally it is an alterative, a laxative or a purgative, according

to the size of the dose and the intervals between them. As a purgative it causes yellow, brown or greenish black dejecta, which are considered very desirable in many cases as indicating that the organs of digestion are roused to proper activity. If, however, these dark, greenish actions are very thin and watery they are not at all satisfactory.

This drug is also a useful diuretic in small, repeated doses of gr. ½ (0,03), especially in cases of anasarca when the heart and kidneys are involved. In combination with Squills and Digitalis this action is increased. It tends to reduce inflammation in serous membranes if properly administered, and was therefore called an antiphlogistic by the older writers. When the dose is too large, or is not followed by purgation, it often causes inflammation of the gums, resulting in a profuse and obstinate flow of saliva, accompanied with fetid breath. Sometimes the inflammation is so severe as to destroy large areas of tissue, and to threaten life itself, especially in the case of a very young or weak patient. When a person has been "salivated" the tendency becomes established so that no mercurials can be afterwards used without extreme caution.

Such a susceptibility sometimes exists naturally, and is then classed as an "idiosyncracy." In such instances the most minute doses may cause most unpleasant results. Before prescribing Mercurials for a patient it is prudent to inquire whether such a condition exists. Chlorate of Potash seems to be the most generally used corrective for ptyalism. It is made into a gargel 3 Drachms (11.6) to the pint (473), of water, and the mouth and throat are washed and gargled therewith at frequent intervals. Sometimes half an ounce (236.) of Tincture of Myrrh and 30 Minims (1.84 cc) of Tincture of Belladonna are added to the solution with decided advantage.

Calomel enters into the composition of several purgative pills, notably the official Compound Cathartic Pill of the Dispensatory. It is sometimes mixed with oil and administered hypodermically, in obstinate cases of tertiary Syphilis, but there are objections to this procedure. It will enter the system through the skin when combined with oils and rubbed upon the surface, Also it is sometimes deposited upon the skin by volatilizing it with heat and exposing the body to its fumes. The uncertainty as to the amount absorbed and therefore concerning its actual dosage is a disadvantage belonging to this measure.

The dose of Calomel is from 1-20 gr. (0.003) to 15 grains (1.0). It is most conveniently administered in the form of Tablet Triturates. These are of various dosage, each dose being combined with nine times its weight of Milk Sugar.

Calomel, as well as the other salts of Mercury, is diffused throughout the system whenever given in large doses or in small ones long continued. It is found in the blood, tissues, feces, urine, milk and tears.

As in all proportions and forms Mercury is one of the surest germicides it is not unreasonable to suppose that the presence of even a minute quantity in the system aids the restorative and resisting powers of Nature to oppose the multiplication of pathogenic germs and thus, though not sufficient by itself to act as a germicide, adds to the antiseptic powers of the system and turns the wavering scale in the direction of health or recovery.

Calomel is often combined with ointment basis as a soothing, germicidal agent and there can be no doubt of its value. An ointment composed of lard, simple cerate and Lanolin in equal proportions, to which 5 per cent by weight of calomel has been added, is an efficient application to ordinary abrasions, burns, cuts and bruises.

BOOK REVIEWS.

HOOKWORM DISEASE.

Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment. By George Dock, A.M., M.D., Professor of Theory and Practice of Medicine, Medical Department of Tulane University, New Orleans, La., and Charles C. Bass., M. D., Instructor of Clinical Microscopy and Clinical Medicine, Medical Department Tulane University of Louisiana, New Orleans, La. Illustrated with forty-nine special engravings and colored plates. St. Louis, C. V. Mosby Company, 1910.

This is the most authoritative and complete work on the remarkable subject of uncinariasis that has as yet come to the reviewer's table. Uncinariasis is so exceptional from almost every point of view that its study reads more like the imaginings of an Edgar Poe than an account of existing physiological and pathological facts. The wide distribution of the parasite and the length of time during which its existence was unsuspected; the ease of its demonstration when once looked for; the extent of its ravages, affecting as it does the welfare and prosperity of people in large areas of different countries; the simplicity and ease of the treatment required for relieving a victim from its clutches; and the almost inconceivable succession of independent, unconnected steps in its development from the ovum to the full-grown, blood-sucking worm form a chapter that is one of the most striking, cryptic and wonderful in the history of medicine. The book is appropriately dedicated to "Charles Wardell Stiles, Ph.D., D.Sc.," to whom more than to any other one man the world owes the knowledge concerning the hookworm, its life history, pathological effects, and the treatment required to eradicate the disease.

It is printed throughout upon cameo paper, the result being that not only the illustrations but also every printed line becomes a joy to the eye and a satisfaction to aesthetic taste.

Compliments to the distinguished authors, or to their work, would be supererogatory, but a few words of detail are not out of place.

The book contains 250 printed pages, divided into ten chapters. The first is devoted to a history of the disease, and its seventeen pages are full of interesting statistics, showing that an authoritative description of conditions now known to be due to hookworm dates as far back as the writings of Piso, in Brazil, in 1648. Between 1600 and 1900 A.D. there were epidemics of what was evidently uncinariasis in various countries, always among miners.

The second chapter records its distribution in the United States of America, and gives interesting data concerning "dirt eating" and 'bare-footed children." The third gives an intensely interesting account of the development and reproduction of the worm, first giving zoological features and classification. Fourth, modes of infection; fifth, pathologic anatomy, also discussing the lesions, poisons, blood changes, etc.

The sixth chapter gives practical descriptions of symptomatology, effects upon blood and various organs. The seventh chapter occupies twenty-seven pages, and is devoted to the various plans and features of diagnosis. Eighth, Prognosis, Mortality, Complications. Ninth, Prophylaxis in all its aspects is considered, including its necessity as a sanitary measure. It deals with all necessary details from the Construction of Privies to Education. The tenth chapter deals with Treatment in all its phases. To crown all, the cuts and photo-engravings stand out with a clearness and beauty only seen when artistic photography, artistic plate work are rendered on art paper. The screen lines are invisible.

The least consideration of the foregoing list shows that the whole subject is thoroughly dealt with. The prominence and experience of its authors, the completeness of consideration displayed, the scholarship manifested in the text, and the perfection of the mechanical workmanship of this book render its destiny as a classic above dispute and beyond doubt.

Any medical library will be adorned by its presence.

A MANUAL OF DISEASES OF THE NOSE, THROAT, AND EAR.

By E. Baldwin Gleason, M.D., Professor of Otology at the Medico-Chirurgical College, Philadelphia. Second revised edition, profusely illustrated. $2.50 net.

This is a great little book of about 560 pages. Though some much larger volumes contain no more pages, yet by the perfection of the bookmaker's art, the excellence of paper and printing, the flexible, morocco covers, and the generally harmonious proportions, it at first impresses one as a small book. This impression is promptly dissipated by an examination of the work. By the time one realiezes the scientific yet practical character of the descriptions, diagnoses and instructions given, and sees how clearly the numerous original drawings illustrate and explain every position assumed, one comes to know that it is, in reality, a great book.

Of course specialists in the subjects treated of, men with many books devoted thereto, can get along very well without it; but every such an one will get his money's worth out of this clever volume, probably several times.

There are practical hints, almost "tricks of the trade," and logical prescriptions with liberal comments on the way they may be used, that seem to the reviewer immensely valuable. Of one thing he feels certain, and it is this: The general practitioner who is armed with Dr. Gleason's work can himself successfully attend to many disorders of the throat, nose and ear which otherwise he might feel tempted to refer to a specialist. This is one feature which makes it very valuable.

Published, Philadelphia and London, by W. B. Saunders Co., 1910.

LESSONS ON THE EYE.

For the Use of Undergraduate Students. By Frank L. Henderson, M.D. Fourth Edition, Revised. Price, $1.50 net.

The plan of this book, though extremely logical and practical, differs widely from that upon which most text-books of medicine or surgery are written. Instead of being divided into chapters, it is presented as twenty-eight successive lessons, in logical sequence.

The author states, in a seven-line preface, that the

book is intended as "a substitute for the student's classroom notes."

It is, however, not like a compendium, wherein are compiled questions and answers with a view of enabling a student with a parrot memory to pass an examination in a subject of which he is entirely ignorant.

It is in reality a text-book on the anatomy, physiology, and diseases of the eye, wherein all the facts necessary to their perfect elucidation are plainly and fully stated, while all unnecessary considerations and unproven theories are omitted and left for consideration at some future time less strenuous in its demands than that available at a medical college. The diagrams, drawings, and engravings are abundant, and as enlightening as those in Gray's or in Cunningham's Anatomys, and no higher praise than that is needed.

The eighteenth and last lesson is devoted to a careful study of the therapeutics of the eye. As local anaesthetics our author seems to have little faith in any but cocaine, but he deplores its use in any circumstances as an element of treatment. Only as preliminary to operation does he approve of it. All others, from chloretone to novocain he dismisses as unworthy. As a mydriatic he recommends Homatropin hydrobromate in the strong solution of two grains to one dram of distilled water, one drop in each eye every ten minutes for one hour. "Thirty minutes after the last drop the patient is ready to examine. The effect will wear off in about thirty-six hours," he says.

He mentions all the other well-known mydriatics, stating strength to use and duration of effect, also the precautions necessary. The instructions concerning antiseptics for the eye are full and wise.

Of the silver preparations he prefers Protagol and argyrol.

He considers the usefulness of adrenalin as "limited," and warns against its use in glaucoma. From the foregoing the reader can judge of the degree of usefulness possessed by this little book. It is worth the while of every teacher of ophthalmology to investigate it. It will prove a valuable aid in imparting knowledge.

Published by P. Blakistons' Son & Co., Phialdelphia, 1910.

A TEXT-BOOK ON THE THERAPEUTIC ACTION OF LIGHT. By Corydon Eugene Rogers, M.D., Chicago, Ill. With Original Illustrations. Published by The Author.

When a full-sized text-book is "published by the author" there must be a reason. The reason why Mark Twain published Innocents Abroad himself was because the publishing fraternity did not appreciate or understand the taste of the public as well as he did, and declined, with thanks, "not because the work is without merit, but for the reason that it is not suited to our present needs," or words to that effect.

If such is the reason that led Dr. Rogers to publish his own book it seems to this reviewer that the publishing fraternity has made another mistake, perhaps not so colossal as the one first mentioned, but of the same general character. The book contains over 300 large pages of good, clear type, divided into eighteen chapters. The frontispiece, published by the "Courtesy of H. K. Mulford & Co.," gives three colored plates showing "tuberculin diagnostic reactions." The upper picture shows the ophthalmic reaction (Wolff-Eisner and Calmette). The central picture is of "Von Pirquet's Cutaneous Reaction," from tuberculin vaccination, while the third and lowest tinted illustration reveals "Moro's Cutaneous Reaction," resulting from tuberculin inunction.

To one who foresees the immense importance of these and other physiological reactions regarding diagnosis and treatment, and the acceptance or rejection of some of the more modern theories and plans of treatment, these illustrations alone are worth deep consideration.

The remaining engravings are placed among the pages they illustrate, and though neither numerous nor remarkably good are up to the average.

The customary dive into the body of the book failing to reveal the reason for author-auto-publication, the reviewer turned, as he should have done at first, to the "Introduction," wherein the author explains things. Traveling in Central America "some years ago" he noticed certain naked Indians lying stretched in the blazing sunlight, and learned that this was their way "of treating consumption, rheumatism, neuralgia, etc." The exposures "were always made in such a manner that the solar rays fell at right angles upon the affected parts."

After a page of personal reflections, the "Introduction" ceases, having imparted only the Indian habit of sun bathing. In the first chapter, after some really interesting suggestions concerning the nature of color he leads to a study of the electric light cabinet and its physiological effects, ending with some remarks upon *solar* rays, and explicit directions how to use them in the cauterization and radical cure of lupus.

It is in the second chapter that originality becomes evident. It gives a hint of many years of experimenting resulting in the production of certain "non-parallel beams crossing each other in sufficient numbers to form one or more very brilliant spots." For best results an incandescent (not arc) lamp of *"not less than six hundred candle power"* is required.

"These spots are the penetrating points to which I sometimes refer as 'the new force,' 'new rays,' or 'Rho rays.'" The author seems to demonstrate, by his records and illustrations, that the Rho rays penetrate substance as do the X-rays, *but without electrical apparatus of any kind*, and with a difference. Bone is transparent to them, and casts no shadow.

The negative of an ordinary photograph is placed over a sensitized plate which is enclosed in a light-proof case, the open hand is laid upon the back of the negative, all being wrapped in black cloth, the whole covered by a sheet of lead. An inch hole is now cut through lead and cloth until the skin of the hand is exposed. The *Rho rays* are turned upon the skin through this opening, and the result is a reversed, or white, copy from the entire negative, but *no indication of the bones* of the hand are evident.

A new sensitized plate, enclosed in its light-proof holder as before, replaces the first one used, and now the X-ray, instead of the Rho, is turned upon the inch opening as before. The result is a shadowgraph of the bones of the hand, but no signs of the intervening negative. Which goes to show that if, when hereafter repeated, these experiments are

proven to be correct and their results are as above described, they will demonstrate the existence of the so-called Rho rays, their great penetrating power, and their entire differentiation from the X-rays. The book treats of the therapeutic value of light, especially as shown by the Rho ray. Anyone who dismisses the subject as unworthy of consideration may find, later, that a mistake was made. The matter is not yet demonstrated, perhaps, but it is certainly worth investigating. It looks like the possibility of a newly discovered physical or therapeutic force.

ALCOHOL.

A Dangerous and Unnecessary Medicine. How and Why. What Medical Writers Say. By Mrs. Martha M. Allen, Superintendent of the Department of Medical Temperance, for the National Woman's Christian Temperance Union, and Published by that Department. Marcellus, N. Y., 1910.

If the reader wishes to consider every possible argument against the use of alcohol in medicine, without the shadow of an opposing opinion or experience; if he desires to read the condemnatory opinions of the large number of physicians, prominent or obscure, who, leaving *medias res* plunge into extreme and unqualified condemnation of the 'destructive drug;" if he will be satisfied with arguments and statistics all on one side of an important question with no opposing voice within hearing, then he will find in this book an ideal presentation of the subject of alcohol, according to his own views.

The reviewer is not to be understood as taking the other side of the question. He is merely insisting that there *is* another side, and that nothing is proven or refuted by considering one side only.

The book is well and entertainingly written. Possibly some readers may meet therein occasional statements that do not tally with their own conclusions derived from years of bedside observation. Other readers, equally experienced and sincere observers, will earnestly agree with many of even the most extreme conclusions the author has drawn from the experience of contributing physicians.

Some little space is devoted to discussing cocaine, caffeine, phenacetin, etc. Where extreme views prevail in the consideration of drug therapeutics common sense expires. Perhaps no better illustration of this stateemnt could be found than appears on page 340, whereon Dr. C. H. Shepard, of Brooklyn, N. Y., is made to say: "Quinine is a most fatal drug. Of course it is the orthodox treatment for malarial conditions, but quinine never did nor never can cure malaria or any other disease." In another paragraph, scoffing at the belief in its usefulness as an antidote to malarial infection, he says: "A drug disease is added to the original disease." Doctors who spend their lives fighting the congestions caused by malarial infection will doubtless be happy to learn that the use of quinine will now, henceforth and forever be relegated to innocuous desuetude.

The book is excellent reading for members of the W. C. T. U. and for physicians who accept their arguments and statistics unchallenged.

By some curious accident the last seven pages of the book, from 429 to 435, inclusive, are repeated. Perhaps the proof reader was not a total abstainer.

PELLAGRA.

By Dr. A. Marie, Physician to the Asylums of the Seine, Editor in Chief Archives de Neurologie, and Director of the Laboratory of Pathological Psychology, Ecoles des Hautes-Etudes, Paris, France. With Introductory Notes by Prof. Lombroso. Authorized Translation from the French by C. H. Lavinder, M.D., Passed Assistant Surgeon U. S. Public Heatlh and Marine Hospital Service, and J. W. Babcock, M.D., Physician and Superintendent State Hospital for the Insane, Columbia, S. C. With Additions, Illustrations, Bibliography, and Appendices. The State Co., Publishers, Columbia, S. C., 1910.

The foregoing title of a single word, but with its long following of designated positions of honor, eminent commentators and translators, is only a suitable introduction to a study of the many facts, phenomena and deductions presented in this small but remarkable book. It is published to the medical profession of America by the translators, not by Dr. Marie, the author, who previously published it as a translation and abridgment of the work of Lombroso. Upon this composite French and Italian framework our American translators have built, with their comments and additions, a classical work on pellagra, which brings to a focus all the practical knowledge concerning that baffling disease up to the date of its publication. The preface added by the lamented Lombroso renders the book more precious as the last utterance upon the subject by a medical philosopher who had no superior in his day and generation.

The discoveries and theories advanced since the publication of this book do not diminish its value. The recorded conclusions gathered from years of careful clinical observation are not required to be changed or distorted to accommodate any new theories. The new theories must demonstrate their compatibility with clinical observations before they can be finally accepted as facts. Truth is always true, and there is nothing in the universe that can make it anything else.

If the simulium shall finally be shown to be a causative factor in pellagra it will inevitably also be discovered that in some way there is a connection between either its existence or its virulence, and unwholesome maize.

The whole book is a sermon to avoid spoiled maize. The whole world has been levied upon for illustrations of its results as pellagra.

The student of this disease will find here in condensed and lucid form all that is known about pellagra, saving only the theory of transmission by gnat bite.

He may go farther, but he will find nothing outside or beyond it up to announcement of the simulium theory. Be that true or erroneous, the information one requires to recognize, diagnose, treat and care for pellagra can be found nowhere in more condensed or authoritative form than in this book.

The illustrations are gruesome but graphic, and of excellent workmanship.

SUPRACAPSULIN (Cudahy)

Permanency and Physiologic Activity of the Supracapsulin Preparations Guaranteed

Scientific Literature and Samples will be sent on request.

Supracapsulin Inhalant (*Cudahy*)

(1-1000 oil solution of Supracapsulin). Valuable as a local application by atomizer or on pledgets of cotton, in the treatment of *coryza, laryngitis,* and other *inflammatory conditions of the upper air passages.*

Serviceable as a *lubricant* for *sounds, catheters, specula* and *other instruments,* where there is congestion or pain.

Supracapsulin Preparations:
Solution 1-1000
Inhalant 1-1000
Ointment 1-1000
Co-Capsulin (Supracapsulin with Cocaine)

See Government Report (Hyg. Lab. Bulletin No. 61), which emphasizes the superiority of Supracapsulin (Cudahy) over all other epinephrin preparations.

Pharmaceutical Department
THE CUDAHY PACKING COMPANY, South Omaha, Neb.

The strength of the ordinary digitalis preparation sways to and fro as the crude drug varies in glucosidal content, but

the composition of Digalen is unchangeable—can never be shifted

from its unerring exactness by the vagaries of plant or leaf, season or crop, for into every 16 minims enters precisely 1-222 grain of Cloetta's soluble digitoxin, the most active of the principles of digitalis, having essentially the same action on the circulatory system as the drug itself.

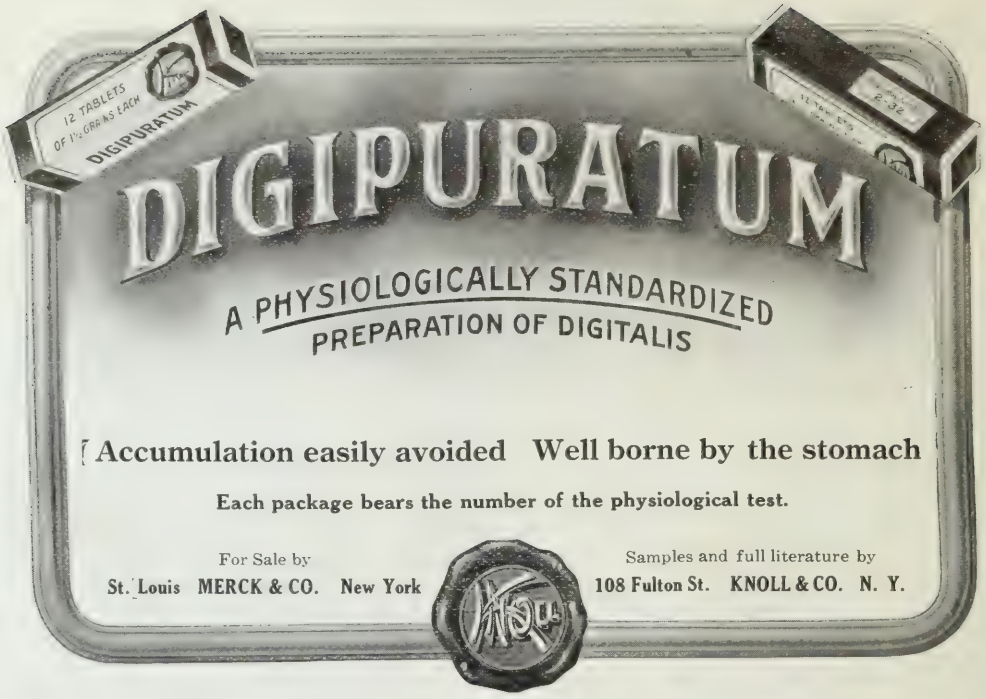
"Digalen is far more prompt in action than any other digitalis preparation and affords security because one can regulate the dosage with accuracy."

Send for a sample and prove it.

DIGALEN solves the digitalis question for you.

Rids you of all uncertainty, all guesswork, all groping in the dark.

THE HOFFMANN-LA ROCHE CHEMICAL WORKS
65 FULTON STREET, NEW YORK


12 TABLETS OF 1½ GRAINS EACH
DIGIPURATUM
DIGIPURATUM
A PHYSIOLOGICALLY STANDARDIZED PREPARATION OF DIGITALIS
Accumulation easily avoided Well borne by the stomach
Each package bears the number of the physiological test.
For Sale by
St. Louis MERCK & CO. New York
Samples and full literature by
108 Fulton St. KNOLL & CO. N. Y.

LOCAL ANAESTHESIA
Also an Adjuvant to Ether in

GENERAL ANAESTHESIA

"KELENE"
(Pure Chloride of Ethyl). FRIES BROS., Mfrs., 92 Reade St., N. Y.

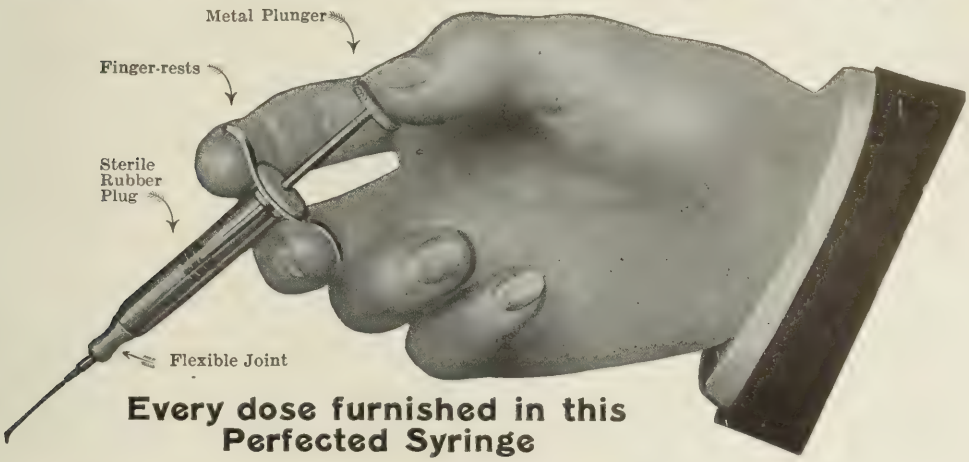
Absolutely
PURE
PRACTICAL
PORTABLE

In Glass Antomatic Spraying Tubes

Sole Distributors for the United States MERCK & CO., New York, Rahway, St. Louis

Mulford's Antitoxin

and the New Syringe



Every dose furnished in this Perfected Syringe

Advantages of New Syringe: ASEPSIS, contamination impossible.

Positive Working: The metal plunger screws into the rubber plug, adjusting pressure and making action positive.

Metal finger-rest with rubber guard at top of syringe prevents any possibility of syringe breaking or injuring operator's hand.

Needle attached with flexible rubber joint permits motion of patient without danger of tearing the skin—a great advantage in administering to children.

Our new adjustable rubber packing possesses great advantages; it is readily sterilized, does not harden, shred, absorb serum or become pulpy.

Simplicity and accuracy—no parts to get out of order.

Mulford's Antitoxin is Accepted Everywhere as THE STANDARD

The higher potency enables us to use much smaller syringes. Minimum bulk—maximum therapeutic results

Brochures and Working Bulletins sent upon request

H. K. MULFORD CO., Philadelphia

New York Chicago St. Louis Minneapolis San Francisco
Atlanta Kansas City

WHY USE ACTIVE PRINCIPLE GRANULES?

BECAUSE they convey the actual medicinal element of the drug freed from all inert matter.

BECAUSE they are in every single instance accurate in dosage and true to label.

BECAUSE they are more permanent than fluid medicines can possibly be.

BECAUSE they are easy to take—acceptable to the most hard-to-please patient.

BECAUSE they are—by reason of their small size and compactness—easy to carry and dispense.

BECAUSE they disintegrate quickly in the gastric fluids—most pills and tablets do not.

BECAUSE they produce a precise effect and deliver results in all cases where results can reasonably be expected.

Ask us to send you a 6-vial case of assorted granules by way of introduction; and also a 300-page book telling how to use the alkaloids.

THE ABBOTT ALKALOIDAL COMPANY

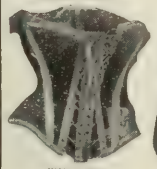
CHICAGO

TORONTO SEATTLE SAN FRANCISCO NEW YORK

As a Matter of Comparison

SILICA - SODA

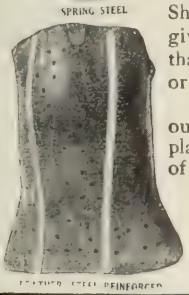
PLASTER PARIS


WOVEN WIRE

STARCH

YUCCA WOOD

SPRING STEEL


LEATHER STEEL REINFORCED

SOME form of support is a necessity in 90% of the cases of Spinal Curvature, Pott's Disease, etc. These supports have usually been made of rigid, hard, unyielding material, which, while perhaps supplying the required support have many undesirable features, making the remedy almost as bad as the disease. Restricted respiration and heart action, hindrance to growth and development, muscular atrophy, scalded skin, etc., are some of the minor ills that accompany the wearing of jackets made of plaster of paris, sole leather, steel, etc.

Here are a few of many hundreds of old jackets and supports we have replaced with the Sheldon Appliance to the infinite satisfaction of physician and patient.

STEEL WITH CRUTCH

SOLE LEATHER

RIGID STEEL

STEEL, LEATHER COVERED

GLUE AND CLOTH

PLASTER PARIS

RAWHIDE

Here's the Comparison

THIS Sheldon Appliance is humane, cool and comfortable. It does not chafe or irritate even in the hottest weather. It provides just the required support, exerting a gentle, firm pressure where needed, yet permitting full respiration and proper muscular action. It lifts the weight of the head and shoulders off of the spine and corrects any deflection of the vertebrae. It weighs ounces where other spinal supports weigh pounds.

Every Appliance is Made to Order to fit the individual requirements of each patient in accordance with measurements taken by the physician. It is as easy to take off and put on as a coat. It cannot be detected through the clothing. In over 15,000 cases, this Sheldon Appliance has produced results and given comfort to the patient far exceeding that derived from the usual plaster of paris or other unyielding jackets.

We will be glad to send to any physician our plan for mutual co-operation which explains in detail just how the Sheldon Appliance is adapted to all forms of Spinal Curvature, Irritation and Pott's Disease.

We have fitted grandparents of 80 and over, and babies of a year and less.

Philo Burt Mfg. Co. **188 3rd St., Jamestown, N.Y.**

CHINOSOL

(Pronounced Kinno sol)

BEST ANTISEPTIC

BECAUSE

It is non-poisonous and non-irritating
It does not coagulate albumin
— thus penetrates deeply.
It does no injury to membranes
It does not damage newly forming tissue
It possesses marked analgetic power

BESIDES, it is stronger than the deadly bi-chloride

one pint of 1-1000 solution costs you less than 2 cents

Powder and Tablets.
Full Literature on Request

CHINOSOL CO., PARMELE PHARMACAL CO., Selling Agents
54 and 55 South St., New York

Welch's

Grape Juice

A Liquid Food

POSSESSING all the nutrient essentials so necessary for the upbuilding of the body in sickness and convalescence.

It gives vigor to the weakened organism, without subsequent reactionary effects.

THE Concord Grape is richest in food value; the Chautauqua Concord is richer than any other Concord—and we buy at a bonus and press only the choicest clusters of the entire Chautauqua belt.

Wherever and whenever a liquid food diet is indicated physicians prescribe WELCH'S GRAPE JUICE with the most gratifying results.

ITS delightful aroma and fresh fruity flavor tempt the most jaded appetite; it is laden with health making grape sugar, gluten, mineral salts and fruit acids.

It is of especial value in fever cases.

Sold by leading dealers everywhere. Four-ounce bottle mailed for 6 cents. Sample pint bottle express prepaid, 25 cents. Literature of interest to physicians free on request.

THE WELCH GRAPE JUICE CO., Westfield, N. Y.

ECHITONE

A CORRECTOR OF BLOOD DYSCRASIA

POWERFULLY ALTERATIVE AND ANTISEPTIC

ULCERO CRUSTACEOUS SYPHILIDE

SHOULD BE PERSISTENTLY PRESCRIBED IN

PSORIASIS, CHRONIC ECZEMA, SYPHILITIC ULCERS AND ERUPTIONS, FURUNCULOSIS, Etc.

Complete formula and literature to Physicians only

STRONG, COBB & COMPANY, CLEVELAND, OHIO

REGULIN

A HARMLESS, TASTELESS REMEDY FOR **CONSTIPATION**

Its use solves the problem of intestinal elimination, with all that this means in preventing disease and promoting health. Use by adding to DAILY FOOD. Physician's price, 3 packagesfor $1 del. Samples and Schmidt's Treatise on request.

The Reinschild Chemical Co.
71 BARCLAY ST., N. Y.

THE PURITY OF POND'S EXTRACT

—its absolute freedom from adulteration or sophistication, together with its superior quality, painstaking methods of preparation and unvarying uniformity have made it for over sixty years the standard extract of hamamelis.

The physician who wishes to obtain the special effect of hamamelis should invariably use POND'S EXTRACT—a product of established reliability and maximum therrapeutic efficiency.

POND'S EXTRACT CO.

London New York Paris

These trade-mark crisscross lines on every package

CRESCO FLOUR DIET FOR DYSPEPTICS

And Cases of

KIDNEY AND LIVER TROUBLES AND OBESITY

Makes delicious foods for everybody.

Unlike other foods. Ask physicians. For book or sample, write

FARWELL & RHINES, WATERTOWN, N. Y., U. S. A.

Style 12

EVERY COAT WE TURN OUT A WINNER.

Physicians' coats for professional use. Made of white or sixty other shades of washable materials. Fast colors. Thoroughly shrunk before making. Made to measure. **We pay delivery charges to all parts of the world.** Our "Swatch Card," showing materials, styles and prices, free upon request. Dressing Gowns, Smoking Jackets, Bath Robes and **Hospital Uniforms a Specialty.**

WEISSFELD BROS.
Manufacturers of PHYSICIANS' COATS,
"The kind they all admire."
115K Nassau St., New York.

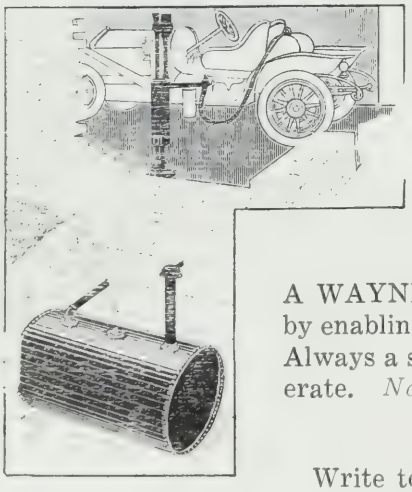
Doctor: Send your orders to

The McDermott Surgical Instrument Co., Ltd.

MANUFACTURERS AND DEALERS IN

Surgical Instruments and Appliances
Artificial Limbs, Trusses, Crutches, Elastic Hosiery, Etc., Etc.

316-318 St. Charles St. NEW ORLEANS, LA.



Why spend unnecessary money to operate your Automobile?

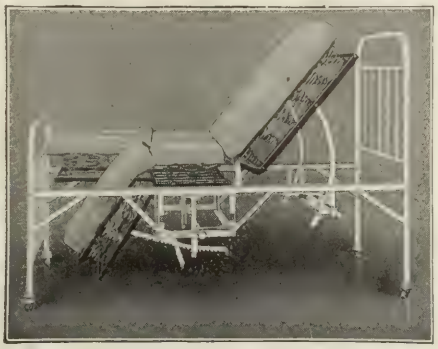
Aren't your repair bills large enough without paying the ng price for gasoline?

A WAYNE Underground Storage Outfit saves YOU money by enabling you to purchase direct from the Oil Company. Always a supply on hand. Easily installed. Simple to operate. *Nothing to get out of order.*

Write today for information and prices.

Wayne Oil Tank & Pump Company,

DEPARTMENT N. FORT WAYNE, INDIANA



The Wallace Adjustable Invalid Bed

AN IDEAL HOSPITAL BED, PRACTICAL, EFFICIENT AND DURABLE

Every position required in surgery easily and quickly obtained with our ingenious appliance. It meets every requirement in handling the sick; saves 75 per cent of the labor in nursing; prevents bed sores; solves the problem of drainage in pelvic and abdominal surgery. Obstetrical cases and fractures are easily handled; no danger of displacement after fracture is once set, as the middle section lowers for use of bed pan and douche; no lifting or moving necessary. Simplifies surgical dressings, bathing and change of bed linen. A valuable addition to every Physician's equipment.

THE WALLACE BED soon pays for itself in the increased charges obtained for rent of rooms furnished with it. Many Hospitals and Sanitariums are not only making a reputation for efficiency and up-to-dateness by using our bed, but are making big money out of it. WHY NOT YOU?

THE WALLACE BED is made entirely of metal; equipped with best box type, oil tempered steel springs, and high grade soft felt mattress. We guarantee it to be perfect in every detail of construction. Finished in Japan and white enamel. We have a large stock always on hand for immediate shipment.

Special Discounts to Hospitals, Physicians and Nurses. Write today for Illustrated Booklet with Prices.

THE WALLACE INVALID BED CO.

Dept. N, First National Bank Bldg., Fort Smith, Ark. (Formerly of Chicago, Ill.)

The Fact . . .

that light from the upper (violet) end of the spectrum and light from the lower (red) end produce opposite therapeutic effects, will give you an inkling as to the possibilities of

Color Therapy

Please let us send you our literature giving the results of the past four years' research and experiment in this line.

The Leucodescent Therapeutic Lamp

with its various color-screens, is a simple, convenient and effective means for the therapeutic application of segregated light frequencies.

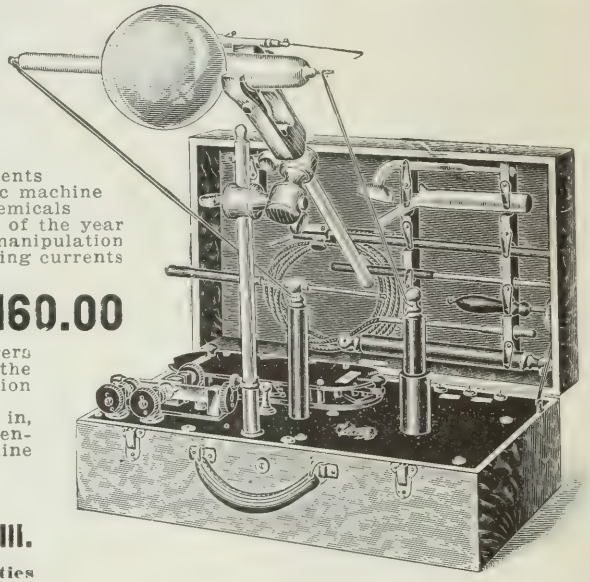
The Leucodescent Company,

Suite 416, Randolph St. CHICAGO, ILL.

PROGRESSIVE PHYSICIANS

consider X-Ray and High Frequency Apparatus an essential part of an Office Equipment

No 1 Portable X-Ray and High Frequency Coil meets all ordinary Requirements.



It does excellent X-Ray work
It delivers all of the High Frequency Currents
It is twice as powerful as a 16 plate static machine
It does not require motor, batteries or chemicals
It is an apparatus which works every day of the year
It is simple of construction and easy of manipulation
It is operatable on either direct or alternating currents
It is thoroughly guaranteed

THE PRICE, LESS TUBE AND STAND IS . . . $160.00

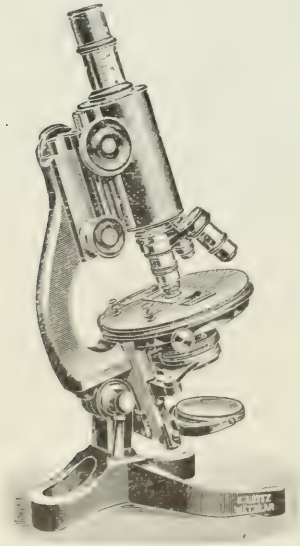
We are the largest exclusive manufacturers of electro-therapeutical apparatus in the country and in consequence, are in position to advise you in selecting your equipment.

Let us know what you are interested in, or, better still, state whether you are in general or special practice and we will outline your requirements.

VICTOR ELECTRIC COMPANY

55 to 61 Market St., Chicago, Ill.

Branches and Agencies in all Principal Cities



More than 125,000 Leitz Microscopes are in use.

More than 53,000 Leitz Oil Immersion Objectives have been sold.

Leitz' New Microscopes

possess many advantages over the older types and embody several important features not to be found in any others. The mechanical features in the new models combined with the high quality of the recently improved objectives, place the Leitz Microscopes in an

Unrivalled Position

The fact that our Microscopes are in use in the leading institutions all over the world IS THE BEST

Guarantee

that they give universal satisfaction. Also Microtomes, Photo Micrographic Apparatus, Universal Projection Apparatus (Microscopic, Diascopic, Spectroscopic), Reflecting Condensers for Dark Field Illumination, etc.

Leitz New Prism Binoculars

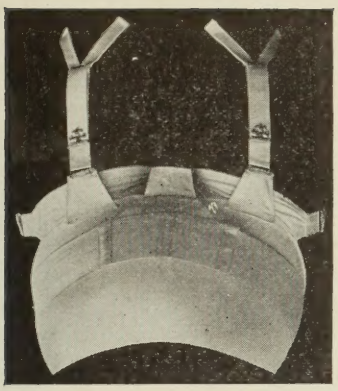
have the greatest light gathering power, the highest stereoscopic effect, the largest field of view, the lightest weight. Absolutely dust-proof and protected against temperature influences.

Catalogues will be sent on application.

E. Leitz

30 East 18th Street, NEW YORK — Wetzlar — 1923 Ogden Avenue CHICAGO, ILL

Frankfort on Main — Berlin — St. Petersburg — London



WOMAN'S BELT, FRONT VIEW

The "Storm Binder" Abdominal Supporter

PATENTED

ADAPTED TO USE OF MEN, WOMEN AND CHILDREN

No whalebones, no rubber elastic—washable as underwear. Suitable for non-operative and post-operative cases. Comfortable for sofa and bed wear and athletic exercise. The invention which took the prize offered by the Managers of the Woman's Hospital of Philadelphia. A Supporter in harmony with modern surgery that supports with comfort. Of great value for visceroptosis. Illustrated folder and partial list of physicians using "Storm" Binder sent on request. Mail Orders filled within 24 hours on receipt of price.

KATHERINE L. STORM, M.D.

1612 Diamond Street, Philadelphia

CLASSIFIED ADVERTISEMENTS

FOR SALE—AUTO TOPS AND SHIELDS—"A proposition that shouts for itself." Runabout Tops, $21.50; Touring Car Tops, $40; correctly designed, thoroughly constructed. Our new Ziz Zag brass tube shield $19.50; automatic brass tube, $16.50; double folding brass tube, $15; mahogany folding frame, $12, guaranteed. Parsons-Curtis Top Co., 1312 W. Harrison St., Chicago, Ill.

FOR SALE: FINE FARM AND COUNTRY PRACTICE. 165 acres fine land, about eighty acres in cultivation, balance fine pasture land. Well watered by big Wills Creek, three lasting springs, well and cistern. Good barn, carriage house, poultry house. Two tenant houses. Best grist mill in county. One 45-saw Smith gin. Excellent water power. Seven room, two story residence almost new. Two miles from railroad station. Rural free delivery; telephone connections. Fine country practice, practically unopposed. A snap for the right man. No time for correspondence unless you mean business. Address,

DR. J. H. BOGLE,
Portersville, Ala.

WANTED—Situation, as partner or assistant, by 1910 graduate in medicine with Alabama license. Address Medico, C—10 Southern Medical Journal.

INDEX TO ADVERTISEMENTS

Hospitals and Sanitariums.

Beechurst Sanitarium ..... II.
Boards Sanatorium ..... VI.
Broughton's Sanatorium ..... X.
City View Sanitarium ..... Inside Front.
Cincinnati Sanitarium ..... I.
Davis Infirmary ..... I.
Douglas Infirmary ..... VII.
Grandview Sanitarium ..... III.
Gulf Coast Health Resort ..... Inside Front Cover
Inge-Bondurant Sanatorium ..... V.
Lynnhurst Sanitarium ..... IV.
Moody's Sanitarium ..... IV.
Muir's Inhalatorium ..... VIII.
Oxford Retreat ..... III.
Pottenger Sanatorium ..... V.
Pettey & Wallace Sanitarium ..... VI.
Popes Sanatorium ..... Inside Front Cover.
River Crest Sanitarium ..... V.
Rudolph Maternity ..... III.
Shoffner Hospital ..... VI.
Southern Infirmary ..... VII.
St. Luke's Hospital ..... II.

Publications.

Malaria, J. H. McCurry ..... X.
Matthews, L. S. & Co ..... X.
Medical Protective Co ..... XV.
Photo-Micrographs ..... XII.
Physiologic Therapeutics ..... XVI.
Saunders, W. B. & Co ..... Front Cover & IX.

Schools.

Birmingham Laboratory ..... XII.
Med. Department Univ. of Alabama ..... XIII.
Medico-Chirug. Coll. Philadelphia ..... XI.
Medical Coll. So. Carolina ..... XI.
New York Polyclinic & Hospital ..... XII.
New York Post-Grad ..... XI.
New Orleans Polyclinic ..... XI.

Apparatus, Appliances, etc.

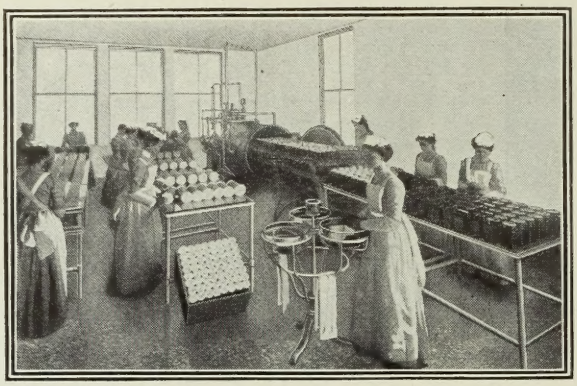
Bauer & Black ..... XXX.
Hicock Mfg. Co ..... XV.
Leitz New Microscope ..... XXVIII.
Leucodescent Co ..... XXVII.
Marvel Syringe ..... XVII.
McCall Incinerator ..... XIV.
McDermott Surg. Inst. Co ..... XXVI.
Philo-Burt Mfg. Co ..... XXIII.
Storm Binder ..... XXIX.
Victor Electric Co ..... XXVIII.
Wallace Bed Co ..... XXVII.
Wayne Oil Tank Co ..... XXVI.
Weissfeld Coat Co ..... XXV.

Drugs and Druggists.

Abbot Alkaloidal Co ..... XXII.
Celerina ..... XII.
Chinosol ..... XXIV.
Digalen ..... XIX.
Digipuratum ..... XX.
DeMoville Drug Co ..... XVII.
Echitone ..... XXV.
Farwell, Rheines & Co ..... XXV.
Kelene ..... XX.
Mulford, H. K. & Co ..... XXI.
Pond's Extract ..... XXV.
Park, Davis & Co ..... Outside Back.
G. W. Carnrick Co ..... XVIII.
Regulin ..... XXV.
Supracapsulin ..... XIX.
VanAntwerp Drug Co ..... Inside Back.
Welch's Grape Juice ..... XXIV.

Unclassified.

Mobile & Ohio R. R ..... XV.



The Extremes We Employ to Secure Utter Asepsis

The B & B surgical laboratory is the very epitome of modern efficiency.

The Aseptic Room, where the products are sterilized, is in an aseptic building—built of steel, cement and tile. A thousand surgeons helped to perfect the plans.

The room is lined in white enamel, without closet or shelf, without crack or seam. Even the corners are rounded.

The tables are made of enameled steel.

The people who work there are governed by surgical rules. Every condition is constantly guarded.

Here B & B surgical dressings come to be sterilized. Here they are packed in sterilized jars and containers.

We have spent two decades in perfecting these products. The highest skill that we know is employed on them.

Each formula and process is the result of countless experiments. Each has stood the test of years.

No man knows how to make surgical dressings better than the B & B. When you specify them you invariably get the utmost you expect.

Samples gladly sent on request.

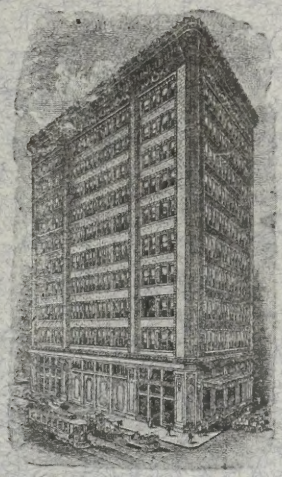
B&B Handy Package Absorbent Cotton

B & B Handy Package Absorbent Cotton is sterile—absolutely—and is kept so by a germ proof wrapper. Its unusual absorbency, long fibre and general superiority, are subject to proof: examine and test it yourself.

Bauer & Black

Chicago and New York

Makers of
Surgical Dressings, Absorbent Cotton,
Adhesive Plaster, O-P-C suspensories, etc.



YOUR NEEDS

IN

PHARMACEUTICALS
CHEMICALS
and SURGICALS

Can be supplied to you to your best advantage here.

Our stock the most comprehensive. Our prices are right---our goods the best.

Van Antwerps'

OXYGEN GAS IN STOCK

VAN ANTWERP BUILDING MOBILE, ALABAMA

The Medicine is in the Bottle as Well as on the Label

We are constantly making improvements in manufacturing processes.

Pursuant to this policy we have recently made an exhaustive study of our line of **ELIXIRS.** Three years of patient labor were given to this investigation. We engaged for the purpose the best elixir expert in the United States.

We could not improve our elixirs in respect to therapeutic efficiency. We *could,* in many instances, improve them in respect to flavor, permanence and physical appearance. This we have done, and to-day we have a line of elixirs that we believe to be unequaled by any other in the world—a line that is supreme in medicinal effectiveness, palatability, clarity and keeping qualities.

And not a single improvement in our whole line of elixirs has been made at the expense of manufacturing integrity. There has been no juggling of formulas, no omission of troublesome ingredients, no sacrifice of therapeutic values. Our elixirs are absolutely true to name—*the medicine is in the bottle as well as on the label!*

JUST OUT—A NEW BOOK ON ELIXIRS. WRITE FOR IT.

PARKE, DAVIS & COMPANY

Laboratories: Detroit, Mich., U.S.A.; Walkerville, Ont.; Hounslow, Eng.

Branches: New York, Chicago, St. Louis, Boston, Baltimore, New Orleans, Kansas City, Minneapolis, London, Eng.; Montreal, Que.; Sydney, N.S.W.; St. Petersburg, Russia; Bombay, India; Tokio, Japan; Buenos Aires, Argentina.